Tips on Palliative Care, Hospice and Geriatric Care in Nursing

Alireza Rafi
Pouriya Darabiyan
Arash Neshati
Dr.Ali Dadgari
Marzieh Sotoudeh
Parastoo Mohamadi

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Editor:

Dr. Kourosh Zarea
Professor of Nursing, Ahvaz Jundishapour University of Medical Sciences, Iran

Authors:

Alireza Rafi
M.Sc of Geriatric Nursing, Behbahan Faculty of Medical Sciences, Iran

Pouriya Darabiyan
Ahvaz Jundishapour University of Medical Sciences, Iran

Arash Neshati
Operating Room Technology Department, Behbahan Faculty of Medical Sciences, Iran

Dr. Ali Dadgari
Assistant Professor of Nursing, Shahroud University of Medical Sciences, Iran

Marzieh Sotoudeh
Master's Student in Geriatric Nursing, Department of Medical-Surgical Nursing Shahid Beheshti University of Medical Sciences, Iran

Parastoo Mohamadi
M.Sc of Critical Care Nursing

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A Tribute to the Lofty Spirit of the National Hero, the Line-Breaking Pilot,
Brigadier General Martyr Fereydoun Zolfaghari

Preface

In recent years, with the help of social and economic development and advances in the health system, it has achieved a higher average age and a longer life expectancy. In addition to its positive aspects, old age is accompanied by various problems that include physical, mental, social and spiritual aspects and are accompanied by imposing significant costs. The inevitable changes of this period, as natural changes in the body, can affect the elderly and their families. On the other hand, maintaining the health and well-being of the elderly is a possible thing that is realized with the wisdom of geriatric nurses. Efforts to maintain and improve the health of the elderly include the initial levels of prevention to disability, which nurse practitioners can be very effective in combining specialized nursing knowledge and skills with decision-making and communication skills, problem solving and diagnostic skills.

Due to the increase in life expectancy and exposure to chronic diseases, the need for long-term care has increased. On the other hand, the progress of medical and nursing care in end-of-life care has led nursing sciences to focus specifically on hospice care. Today, hospice care is considered one of the important topics in end-of-life nursing care, and a nurse who enters this field needs special knowledge and awareness in order to be able to provide comprehensive care based on current science as an expert and professional. Therefore, access to reliable, concise, and up-to-date resources is of utmost importance for these specialists.

Palliative care services, along with the concepts of health promotion, prevention, treatment, and rehabilitation, are considered the fifth axis in accessing universal health coverage, and therefore, in order to ensure equitable access of people to timely, affordable, and high-quality services, the development of these services is considered a necessity. The efforts made in the past decade in this area, while raising awareness among health service providers and the community about the necessity of these services, have also explained the importance of the issue to policymakers, such that significant progress in various areas of palliative care services in the country is observed in the World Health Organization's 2025 report. However, this area of care still requires additional efforts and addressing various and sometimes neglected dimensions of palliative care, one of which seems to be end-of-life care and hospice services, which, for various reasons, especially social and cultural challenges, has not grown at a pace commensurate with other dimensions. This is despite the fact that today the concept of "good death" has become one of the most important keywords in this category, and therefore addressing it is recommended to pay as much attention to "quality of life".

It is hoped that writing this book will take a small step towards improving the health of the elderly and the quality of palliative care.

Pouriya Darabiyan

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Chapter 1: Palliative Care

Palliative Care Nursing and an overview of Palliative Care

Palliative care nurses have knowledge in coping with signs and symptoms that disrupt sufferers' and their households' first-class of life. each pharmacologic and nonpharmacologic measures are used to relieve struggling whether the plan of care involves healing care or strictly the promoting of comfort inside the confines of the existence-restricting ailment. given that nurses are typically the primary healthcare specialists to pick out quit-of-existence issues among sufferers, palliative care abilities are crucial for growing a trusting therapeutic dating with the patient and conveying the patient's wishes to the interdisciplinary group.

Palliative care is specialized scientific care for human beings living with severe infection. the focus is on symptom control and relieving the strain of the contamination that allows you to improve fine of existence for the affected person and the own family. Palliative care differs from hospice in that it could help with patient care regardless of analysis and may be furnished alongside healing treatment. verbal exchange surrounding a patient's desires of care is often a pivotal recognition of palliative care. sufferers admitted to the hospital must have a goals-of-care discussion at the time of admission and any time there is an exchange in condition. This allows set practical expectancies for restoration with the affected person and family. start with an exploration of the fitness repute over the last year. Elicit if there have been a couple of admissions. Has the affected person lower back to their preceding level of health every time, or has there been a stepwise regression in general health? begin dreams-of-care discussions broadly to elicit the affected person's angle, and then narrow the dialogue to specifics which includes the want for intubation, CPR, or different existence-maintaining interventions. Asking permission and providing your expert opinion on what you spot because the fine path of remedy is part of the shared choice-making technique. All interventions ought to be decided based upon a threat/ advantage evaluation. providers aren't obligated to offer remedies a good way to not meet the goals of care or which might be deemed futile. take into account that a staged method to those discussions over numerous days or meetings may be powerful in transferring desires of care from curative to comfort measures. communicating a regular message will aid them in knowledge the disorder development and/or failure to respond to treatments. Time-limited trials of treatments or interventions permit time for patients and households to come to terms and allow for evaluation of improvement or lack thereof.

The area of nursing in hospice and palliative care continues to evolve along with the technological expertise and art of laptop with the dynamics of society, which consist of the aging of the population, alteration of the course of death, and the increased prevalence of advanced persistent diseases as the leading causes of death. In assessment to the extreme, chaos-oriented model of nursing care, wherein there is a considerably less focus on the uniqueness of the impacted person and on the nurse-patient and family relationship, laptop and hospice nursing makes a profession

of the individual (and familiar family) and of the nurse, whose duty is the vigorous, general care of patients and their households in an attempt to promote and enhance their pleasant of lifestyles. the focal point of the personal computer is the avoidance of the onset of great, modern, persistent or life-threatening disease and alleviation of soreness and various forms

laptop and hospice nursing is delivered to sufferers and their relatives in a diffuse environment of care such as, yet not limited to, acute care clinic equipment, long-term care facilities, assisted-living facilities, inpatient, domestic, or residential hospices, computer clinic settings or ambulatory as well as non-public practices and in-prison. practice settings of laptop and hospice nursing are changing in response to the dynamic nature of the contemporary healthcare environment. as an example, although most people of hospice care are delivered in domestic houses (nursing homes, houses, and residential facilities),

such nurses are registered nurses who are educationally prepared and certified to practice in specialty at levels: generalist and superior. levels: These are differentiated by using educational preparation, complexity of exercise, and overall performance of positive nursing capabilities. Palliative/hospice certified realistic/vocational nurses are additionally educationally structured and authorized, but at a distinct amount of complexity in their intelligence. computer and hospice nursing assistants are educationally structured under the demands of the particular practice setting on a nationwide basis, though the amount of the house-of-training is especially proportioned say in the domestic care, hospice and lengthy-term care home settings. The nursing-assistant level of palliative and hospice caregiver has no licensure.

The word palliative is incorporated into the company name and it is currently called the HPNA. and with the help of the 12 months 2000,2,800 nurses had been employed in this budding corporation. Membership has already increased to over 11,000 with a sample of endured increase, which has been achieved in the 45 countrywide chapters.

In 2014, the HPNA went hand in hand with the Hospice and Palliative Nurses foundation and the Hospice and Palliative Credentialing core to form a partnership with a combined duty. The 3 fantastic teams influence the Advancing professional Care and have a collaborate venture to improve professional care in extreme contamination and a unanimous creative broad-minded to remodel the care and lifestyle of important infection.”.

An Evolutionary attitude on Palliative and Hospice Nursing within the early years of the area of expertise of laptop, Billings and Block (1997) recognized the following forces that increased countrywide attention concerning pc:

1) A developing interest in demise and dying

2) The improvement of hospice programs

3) growing integration of ache and symptom management into conventional care

4) challenge approximately the excessive fee of death

5) growing countrywide consciousness on ache management

6) extra interest to the position of medicine in worrying as opposed to curing

7) country wide debates on doctor-assisted suicide and Euthanasia

Academic Practice

it's been diagnosed that instructional education for EOL care is inconsistent at pleasant and ignored for the maximum part, in both undergraduate and graduate scientific and nursing curricula.

also, loss of functionality models with college students in the scientific environment together with the lack of laptop material in scientific and nursing textbooks. in compliance with the mandate of the International Council of Nurses that stated that the first duty of nurses is to validate existence is the nonviolent demise of patients, the yank facility of Nursing through the Robert timber Johnson foundation, organized a roundtable of professional nurses to discuss and provoke academic commerce regarding laptop material. The conclusion was reached that precepts that guide hospice care are essential concepts of all EOL care. The assumptions in such precepts are that human beings are alive into their demise moment; that care coordination should be provided via provision of clusters of various professionals with interest to the physical, psychological, social, and religious needs of sufferers and their families. It transformed into proposed that the said precepts become central to the learning of the nurses. predominantly founded on such precepts, the document dubbed peaceful demise evolved, which inclusive of baccalaureate competencies in palliative and hospice care and content domains where competencies may be instructed.

The importance of nursing in EOL care was highlighted, and the yankees Nurses association drafted a role declaration that focuses on the advertisement of comfort and comfort of dying patients, as well as, training of Physicians on quit-of-life Care, and the nursing initiative cease-of-life Nursing education Consortium. ELNEC was originally aimed at educating associate and baccalaureate applications of nurse educators. ELNEC curriculum has also been altered and tailored to graduate education, geriatrics, pediatrics, oncology, and with veterans..

The Improvement Exercise Nurse’s Position in Palliative Care

superior exercise nurses, in particular nurse practitioners, work in a diffusion of settings, along with acute care. they have got the assessment capabilities and scientific understanding to contain palliative care into treatment for all of their patients. inside the media, conversations frequently get up approximately the excessive prices of health care, the low wide variety of physicians available to care for patients inside the number one care position, and a lack of available specialists, such as oncologists, in the extreme care putting. advanced exercise nurses are knowledgeable and well placed to have a huge effect on these issues. The “role of palliative care nurse practitioners varies, not most effective kingdom to kingdom, however amongst exercise settings inside the kingdom”. superior practice registered nurses represent a precious useful resource in national efforts to enhance healthcare and growth access to excellent pc for all Americans and their families

dwelling with extreme infection, whether or not lifestyles-proscribing contamination or continual modern contamination. Meier and Beresford (2006) emphasize that “advanced exercise nurses often embody in a single man or woman computer’s cognizance at the whole individual and the scientific practitioner’s ability to diagnose conditions, prescribe medications and order remedy interventions—at the same time as recouping salary prices via billing for consultations”. superior exercise nurses in pc regularly spearhead the development, implementation, and evaluation of computer offerings, assuming pivotal management roles not simplest as clinicians, however additionally as directors, researchers, educators, advocates, and health coverage makers. superior exercise nurses are often the fitness specialists who make the case to the health facility administration to implement a palliative care software and increase the marketing strategy with attention of interprofessional sources, feasibility and accessibility, price manipulate, sales technology, integration and leveraging of present offerings, and decisions concerning the structure and model of the applications. They put forth to the administration the operational plan for implementation of pc programs, such as space needs, staffing roles and necessities, simple guidelines and approaches, and projections of affected person volumes and application capacity, in addition to consideration of financial and strategic making plans issues. The advanced exercise nurse makes the case to the administration concerning the sanatorium’s financial viability, such as the fee of the program concerning period of live at the health center, daily census, clinic billing sales, expected price savings, and potential contributions by way of philanthropy. Given their superior medical information and know-how related to healthcare structures, advanced practice nurses offer a futuristic angle as to how laptop can meet the expectancies of quality care within the context of fee-effectiveness and reform. Nurse practitioners provide computer in a holistic manner, collaborate with different healthcare vendors, offer session and support while had to optimize computer practices, paintings inside the organization to construct capacity and help others find out about their role in pc to higher combine it in the team, and improve system consequences, inclusive of the accessibility of care and the variety of sanatorium visits. Fox identified the function of the acute care nurse practitioner in enforcing laptop in the context of oncology care and in accordance with the American university of Surgeons commission on cancer. The ACNP abilities enhance pc by educating sufferers and families approximately their ailment, diagnosis, and treatment alternatives; having tough conversations concerning desires of care; dealing with transitions of care; identifying limitations to computer in the acute care placing; becoming concerned in law to sell nurse practitioner exercise; instructing hospitalists and intensivists approximately pc; and the usage of healthcare correctly, with discount in expensive and undesirable checks. Schreibeis-Baum interviewed 22 professional nation- and federal-degree advocates who work in geriatrics or laptop. It became clear from their interviews that the challenges to advancing laptop rules are information about computer in healthcare settings, cultural beliefs and public know-how approximately laptop, and charge/reimbursement for pc services. virtually, the superior exercise nurse is excellently located to address those barriers and increase the popularity of the role of pc in healthcare shipping. laptop nursing studies generates simple and implemented information to enhance the care of sufferers and families with serious and lifestyles-

threatening contamination in regions of symptom management, psychological responses to infection, and the family caregiver revel in. Nurse researchers who conduct qualitative studies in palliative and hospice care are seeking to broaden theories based on the subjective reports of sufferers and their families. laptop nurse researchers also conduct quantitative studies to check theories as well as to look at the incidence, prevalence, and severity of symptoms; compare models of care; and test the effectiveness of pc and hospice interventions. since the established order of the national Institutes of Nursing studies as an institute inside the U.S. national Institutes of fitness in 1997, there was improved investment of pc studies and vast contributions made to technological know-how by pc nurse researchers. similarly, the Hospice Nurses basis in the u.s.a. has emerge as a investment enterprise for pc nursing research. The Hospice Nurses foundation agenda for 2009 to 2012 targeted on investment research that inspect the signs of dyspnea, constipation, and fatigue. The Hospice and Palliative Nurses Affiliation (HPNA) studies schedule for 2012 to 2015 changed into based totally at the medical exercise suggestions for great Palliative Care, and addressed the first 3 domain names of the recommendations. the primary domain focused at the shape and methods of care, considering the surest membership of interprofessional groups, the focus at the patient and circle of relatives as the unit of care, and the locations and fashions of care shipping. In relation to investigate, the second area focused on the physical components of care, consisting of symptom control and ailment development in sufferers with more than one comorbid situation, as well as the physical care of patients in unique populations. The 1/3 domain concerned psychological and psychiatric care, with a selected attention at the wishes of individuals with serious mental contamination. other funding agencies are interested by ways of selling interprofessional training, the price of professional area of expertise certification, the integration of computer ideas into general care throughout health communities, the value of concurrent curative care with laptop, and the use of research findings to form fitness policy. at the 2017 HPNA assembly, there has been considerable dialogue regarding continuation of the earlier research agenda, which has no longer been completed. there has been dialogue regarding the rethinking of the studies priorities of the organization that pass past research on particular signs to a greater targeted research technique on tactics associated with laptop, consisting of interprofessional collaboration. HPNA’s new studies schedule is in development. All nurses have the opportunity to take part in research by identifying medical troubles unique to palliative and hospice care, collaborating in records collection, and critiquing study’s findings to decide the application of findings, specifically inside the improvement of clinical requirements of care and the development of regulations. As foremost investigators nurse researchers often lead the interprofessional studies crew. In collaboration with different nurses who are doctors of nursing exercise (DNP), and other health practitioners and scientists, nurse researchers broaden new understanding associated with the strong point and facilitate the translation of this pc and hospice understanding into scientific practice. some other key function inside the advancement of laptop nursing is that of educator. A survey performed among acute care nurses in an inpatient unit discovered that nurses lack the expertise and confidence to talk about pc alternatives as well as to use nonpharmacological measures to relieve the suffering of sufferers. in the instructional putting, computer nurses increase

the strong point thru curriculum development and the inclusion of laptop content in the curriculum. thru packages, including the quilt of existence Nursing education Consortium educate-the-teacher, there's in addition dissemination of understanding associated with computer as its miles integrated within undergraduate and graduate nursing curricula each locally and the world over. on the graduate level, laptop can be supplied as a thing of the person nurse practitioner, geriatric nurse practitioner, or own family nurse practitioner curriculum or as a submit-master's certification. amendment of public perceptions of computer is valuable to improving the knowledge of and get entry to offerings, empowering individuals, and involving groups in EOL care. Nurses, as educators, need to awareness on reaching complete know-how of the public regarding laptop. This calls for early dialogue of pc upon prognosis with a extreme contamination like cancer. As health educators in medical settings, palliative nurses combine pc ideas into the generalist setting, wherein most EOL care takes place. This consists of imparting sufferers and families with records regarding ache and symptom control, self-care, and other interventions. As members of an interprofessional crew, laptop nurses in addition mentor and teach different members of the group concerning proof-based totally procedures in laptop. the following case example is that of an APN bringing a selected and properly-defined set of traits, expertise, and judgments to caring for individuals and households going through extreme, progressive, or lifestyles-threatening contamination. This entails excellent clinical and biophysical data, analytical skills, and competence within the scope of the prospect of integrating ethics; humanities; cultural diversity; family, religious, and psychological concerns of the individual are required too. Even as an illustration of proving the APN subrules of professional clinician, educator, consultant, researcher, and collaborator, the following case examine investigates Dame Cicely Saunders 4 dimensions of human struggling in the context of Calkin version of advanced nursing exercise.

Good-Nurse-Bad. Dialogue on the Role of the advanced Scientific Nurse.

Clinician

The APN used the best and relevant assessment methods to determine pain and signs. APN communicated with the rest of the interprofessional group members with an aim of amplifying and implementing a comprehensive plan of care. The APN determined new processes to the management of neuropathic pain and developed medical institution-based standards of physical activities to convey and support this remedy strategy once which done the interventions. advanced science of complex pain symptoms and comfort procedures implemented to address symptoms is revealed through exercise use, using progressive, ethically sound, and scientifically primarily based models.

Educator

The APN has been able to administer complex philosophical, ethical, and scientific control discourses that helped the patient, family, and all the interprofessional crew contributors to get to

a positive end outcome. The APN evaluated the acquiring knowledge of wishes of Mrs. S. and her family members and the entire workers team. The APN provided scientific-based education regarding the following troubles: (a) the neuropathic pain management, (b) position warfare possibility, (c) the actual grieving, and (d) the prospective high-risk bereavement. The APN also trained in other professions; e.g., she inspired the pleasant committee and pharmacy staff of patients thru in-provider actions and hints at the ideology of laptop and created personalized forms of therapy, highest remarkable, with the aid of intravenous lidocaine of intractable neuropathic pain.

Researcher

The APN created its own information through research and translation of evidence to practice. APN did research and integrated computer research methods such as the use of intravenous lidocaine to develop a personalized course of treatment to Mrs. S.**Collaborator**

The APN mentored group of workers in biopsychosocial and non-secular assessments and interventions. The APN constructed and preserved collaborative relationships and identified assets and possibilities to paintings with computer colleagues. The APN facilitated the improvement and implementation of group of workers forums, in-provider education, physician–nurse collaboration, and fine committee consultation. The APN demonstrated the fee of collaboration with the affected person and family, the interprofessional group, and different healthcare professionals to facilitate the satisfactory viable final results.

Representative

The APN consulted with the laptop doctor, computer colleagues, and nice-committee representatives to decide the precise treatment techniques for meeting the needs of the affected person and family. additionally, the bereavement counselor becomes consulted after the APN diagnosed the actualized loss experienced via Mrs. S.'s family. As a consultant, the APN become always available to the affected person and family, interprofessional team contributors, and different healthcare experts to talk about and explain problems surrounding the computer philosophy.

Palliative Care Responsiveness

Hospice care originated in the 11th century and become afforded to weary vacationers on spiritual pilgrimages; later it turned into diagnosed because the care of the unwell and death. with the aid of the 14th century, the time period "palliate" turned into coined, which supposed "to cloak" or "soothe" the symptoms related to illness or its remedy. The concepts of hospice care embrace holistic patient and family-centered care, provided via an interprofessional group of practitioners. constructed on the foundation of hospice care, Palliative Care (pc) addresses care of the thoughts, body, and spirit as health practitioners develop

the best and suitable plan of care for and with patients and families experiencing severe, existence threatening, progressive, or persistent ailments. The difference among hospice care and pc is that pc begins on the time of diagnosis with such illnesses and maintains till the loss of life of the patient and into the bereavement length for families, while hospice care is supplied

over the past 6 months of existence. not like hospice care, computer isn't always depending on diagnosis and can be supplied inside the context of healing treatments, curing what can be cured, however with the concurrent try and alleviate symptoms as a result of the disease or its remedy. both palliative and hospice care can be the principal cognizance of care when totally consolation and supportive interventions are desired to sell great of life until its quit. currently, palliative and hospice care are considered on a continuum of care, with pc starting earlier in the infection trajectory and doubtlessly persevering with until demise, as compared to hospice care, that is at the cease of the illness trajectory, helping patients and households within the ultimate levels of life. but not all sufferers who're dying select hospice, nor do they meet the eligibility standards to be enrolled in hospice care, which is a Medicare benefit. where hospice strives to maximize comfort for the patient, pc can offer patients with sickness-enhancing or supportive treatments regardless of their diagnoses even when they may be residing with chronic and extreme illnesses.

Traits of Hospice Care

Hospice care is related to terminality, and there's often worry on a part of patients and families while the time period is used. This fear is broadly speaking related to the misperception that hospice care is provided only when an affected person is simply nearing loss of life. sufferers and households might also fear that selecting hospice care approach that everyone wish is lost or that the patient will surrender the will to stay. even when a patient and circle of relatives understand that hospice would be an appropriate form of care, fears regarding whether the hospice group will be capable of offer physical comfort, dignity, and support are pervasive. And, perhaps most significantly, the patient might also fear his or her real demise, and the circle of relatives may additionally worry the loss of their loved one.

Hospice care differs from different specialties in that the hospice crew specifically specializes in physical, emotional, and non-secular consolation of terminally sick sufferers via the interventions developed with the aid of the interdisciplinary group. Hospice nurse’s ought to have understanding in the national Institute on getting old defines palliative care as “a resource for all people living with a critical infection, which includes coronary heart failure, continual obstructive pulmonary sickness, cancer, dementia, Parkinson’s ailment, and lots of others. Palliative care may be helpful at any degree of illness and is exceptional provided from the factor of analysis.

Palliative care may be provided in conjunction with healing treatment and does not rely on diagnosis.” Palliative care includes the management of symptoms, such as ache, dyspnea, nausea

and vomiting, fatigue, and others that intrude with the patient's capability to be comfortable. Palliative care can take location in various healthcare settings, together with a hospital, medical institution, long-term care facility, and others. Palliative care is outstanding from other medical specialties by its foci on:

• Incorporation of an interdisciplinary crew to address religious, psychosocial, and cultural needs of sufferers and families

• Integration with healing remedies

• Symptom control in early degrees of disease and throughout

• the sickness system

• patient and circle of relatives' involvement in the plan of care

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Chapter 2: Hospice Care

Hospice is specialized take care of terminally ill patients and their households that often takes area in the domestic. however, it could be furnished in assisted dwelling centers, nursing homes, institution homes, and even inside a hospital putting. The purpose of hospice care is symptom control and aid at some point of the ailment manner. The patient and circle of relatives/caregivers are taken into consideration to be the unit of care, and their desires are addressed by using participants of the hospice interdisciplinary crew. An interdisciplinary approach is used “to deliver scientific, nursing, social, mental, emotional, and spiritual offerings via a collaboration of professionals and other caregivers, with the aim of creating the beneficiary as bodily and emotionally comfortable as possible. Hospice is compassionate beneficiary and circle of relatives/caregiver centered care for folks who are terminally unwell”.

Traits of Hospice Care

Hospice care is related to terminality, and there's regularly worry on the part of sufferers and families while the term is used. This fear is mainly associated with the misperception that hospice care is furnished best when a affected person is virtually nearing loss of life. sufferers and households may additionally fear that choosing hospice care approach that all wish is misplaced or that the affected person will surrender the need to live. even if an affected person and family understand that hospice could be the proper form of care, fears concerning whether the hospice group can be able to offer physical comfort, dignity, and help are pervasive. And, perhaps most significantly, the affected person may worry his or her actual death, and the circle of relatives may fear the lack of their cherished one. Hospice care differs from different specialties in that the hospice team specifically focuses on physical, emotional, and spiritual comfort of terminally sick sufferers via the interventions evolved by using the interdisciplinary group. Hospice nurses need to have expertise in symptom management and be properly versed in how each disease trajectory usually evolves. when an affected person chooses hospice care:

• Care is specifically tailor-made to address issues related to the terminal infection,

• Th e affected person is of the same opinion to forgo healing treatments,

• services are blanketed by using the Medicare Hospice advantage (if the patient is Medicare eligible),

• All cease-of-life issues are addressed in a holistic manner

• sufferers acquire skilled palliative care interventions to make sure consolation

• Care is specifically provided in the domestic

Hospice care is normally provided for sufferers who have a existence expectancy of 6 months or less without lifestyles-sustaining remedy. beyond the 6-month time frame, a patient may additionally maintain to get hold of offerings provided that recertification requirements are met. Hospice care continues through the disorder procedure, in the course of the loss of life process, or even after the patient's death within the form of bereavement assist for the patient's family and caregivers.

Bereavement Care

One feature of hospice care that units it apart from palliative care is the incorporation of bereavement take care of the family after the death of the affected person. Bereavement care is a team effort and can contain cellphone calls or visits to the family individuals or caregivers for up to 365 days after the dying of the patient. Many hospices also comprise memorial services for bereaved households to assist foster a experience of closure. support groups also are regularly offered via hospices and may be specialized by the kind of loss, which includes spousal loss or the lack of a baby.

Hospice, a type of palliative care, is the model for best, compassionate care for human beings going through a existence-limiting infection or injury. Hospice and palliative care involve an interdisciplinary team-oriented technique to expert medical and nursing care, ache and other symptom management, and emotional and religious support expressly tailored to the affected person's specific wishes and needs. some other special difference is that aid is furnished to the patient's cherished ones as nicely. at the center of hospice and palliative care is the notion that each person has the proper to die with dignity and in consolation. households acquire the important guide to permit that to happen. The patient, family, and caregivers are the unit of care, no longer entirely the patient. that is a completely distinctive and unique construct seen primarily in hospice and palliative care.

CMS, the largest payer for hospice, defines hospice care as "a complete set of services diagnosed and coordinated via an Interdisciplinary institution to provide for the bodily, psychosocial, non-secular, and emotional wishes of a terminally unwell patient and/or own family members, as delineated in a specific patient plan of care".

The hospice philosophy of care asserts the idea of palliative care, which promotes first-rate of lifestyles by using improving comfort for people and their households, whom hospice considers the unit of care. Hospice focuses on care versus cure. whilst treatment is not a choice, hospice acknowledges and presents support for a secure demise with dignity as a fundamental intention of care. The hospice philosophy additionally recognizes that dying is part of the lifestyles cycle. the availability of complete palliative care addresses ache relief and luxury and complements great of lifestyles for the terminally sick. The hospice crew assesses the wishes of the character and the character's circle of relatives in the last phase of life and works with them collectively to develop a care method that encompasses bodily, emotional, spiritual, and cultural issues and needs of the man or woman and the individual's own family. Hospice offers palliative care to all individuals no

matter age, gender, cultural heritage, ideals, prognosis, availability of a caregiver, socioeconomic popularity, or potential to pay. Care is typically furnished within the late levels of a sophisticated infection, in the course of the death technique, and maintains within the bereavement length.

History of Hospice

The word hospice can be traced back to the medieval era, while it noted a place of rest or shelter for worn-out or sick vacationers who have been on an extended adventure. Dame Cicely Saunders carried out this term to her work with terminally sick sufferers in 1948 together with her specialized approach to caring for the death. Saunders advanced the total pain principle to cope with the whole lot of suffering (physical, spiritual, psychological, and social) for patients with advanced illness and at the end of life. Addressing a patient's ache on this holistic way caused the availability of palliative care for sufferers with existence-proscribing contamination. She also based St. Christopher's Hospice, the first contemporary hospice, in London, and he or she is the matriarch of the cutting-edge hospice motion in the US. Saunders traveled to the Yale college college of Nursing in 1963 via invitation of Florence Wald, the Dean of Nursing, to introduce this precise type of care provision. In her collection of lectures to medical students, nurses, social employees, and chaplains, she discussed the availability of holistic hospice care and blanketed before and after photos of sufferers with cancer to illustrate the impact of effective palliative symptom management. Dame Saunders's go to in the end caused the begin of the hospice motion within the US and the formation of the first hospice in Connecticut, which began serving sufferers in 1973.

Boom and Improvement of Hospice Care Centers

There have been hospices providing venture-driven skillful hospice take care of patients and families years before Medicare and different repayment. Hospice has grown appreciably in the US. whilst hospice began within the US in the Seventies, cancer become the number one analysis for patients who accessed this particular form of care at the stop of lifestyles. Medicare started reimbursing hospice care in 1983. In its increase and enlargement at some stage in a long time, sufferers experiencing give up stages of chronic diseases are now getting access to hospice care, as are patients with most cancers. a number of the not unusual give up level noncancer diagnoses include but aren't constrained to:

• ALS and different neurologic situations

• Coma

• COVID-19

• Dementia because of Alzheimer's ailment and associated problems

• Coronary Heart Disorder

• HIV Disorder

• Liver Disease

• Pulmonary Disease

• Renal Disorder

• Stroke

In a March 2022 document to Congress, MedPAC (The Medicare charge Advisory fee, a nonpartisan legislative branch corporation that offers the United States Congress with analysis and policy recommendation on the Medicare program) stated that, among 2000 and 2019, hospice use charges among individuals with Medicare greater than doubled, increasing from less than 25% to greater than 50%. In 2020 itself, there was a 9% growth in hospice usage.

Nursing and Relief of Human Suffering

The nurse has continually been a vital parent in the care of dying patients. but, over the last 50 years, the position of the hospice nurse within the u.s. has developed drastically. these days, the hospice nurse is anticipated to have demonstrable expertise in no longer best the nursing care of sufferers who are actively death, but also in palliative interventions.

accordingly, the information of the hospice nurse is in alleviating signs and symptoms, which aligns closely with the unique goal of nursing as stated with the aid of Florence Nightingale (1860), and has been reaffirmed through the yankee Nurses affiliation in the following declaration: “the objectives of nursing movements (also nursing interventions) are to guard, sell, and optimize health; to prevent illness and damage; to relieve struggling; and to recommend for people, households, groups, and populations”.

Hospice Nursing as a uniqueness vicinity

In 1987, the first American enterprise for hospice nurses, the Hospice Nurses affiliation, was formed. This corporation later created the country wide Board for Certification of Hospice Nurses to increase a certification manner for hospice nurses. In 1994, the first certification examination for hospice nurses become provided. folks that handed this test earned the credential CRNH. In 1997, the HNA conducted a position delineation look at and determined that palliative care knowledge changed into required of hospice nurses. as a consequence, in 1999, the NBCHN identified this competency and presented the credential of CHPN (Certified Hospice and Palliative Nurse) to folks that successfully finished the exam. The CRNH changed into retired in 2002, the same 12 months that the credential CHPN become awarded accreditation by using the yankee Board of Nursing Specialties. To more as it should be constituting the dreams of those organizations, the HNA became renamed the Hospice and Palliative Nurses association.

The NBCHN additionally integrated palliative care into its scope and was renamed the Hospice and Palliative Credentialing center. This board gives certification exams for directors, certified

realistic Nurses, Nursing Assistants, Registered Nurses, and advanced exercise Nurses in hospice and palliative nursing.

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Chapter 3: Pain Assessment

Pain

bodily ache is a subjective enjoy defined as “an ugly sensory and emotional enjoy related to actual or potential tissue harm”. not unusual motives for ache at the cease of existence consist of nerve damage or compression, tumor boom, myalgia, and edema. ache is distressing to both the patient and the own family. it's miles roundly considered the only emergency in hospice care and as such must be handled directly. for this reason, cautious evaluation of ache is crucial.

pain evaluation entails collecting correct and in-intensity facts about the pain revel in, source(s) of ache, and assuaging or disturbing elements. maximum typically, pain is classed on a zero-10 scale with zero representing no pain and 10 representing the highest diploma of ache. a few scales also include colours, with muted shades associated with lower degrees of ache and darker hues with better tiers. moreover, faces with various expressions may be incorporated into scales that correspond with tiers of pain. however, linear scales depicting expressions can be misinterpreted with the aid of some patients. for that reason, nurses must provide schooling on using scales and conduct in-depth ache assessments beyond sincerely figuring out an ache score. A mnemonic along with P-Q-R-S-T can offer a systematic method to ache evaluation.

The P-Q-R-S-T mnemonic and others love it arrange assessment questions and guide patients through a multidimensional description of their pain. For patients who're nonverbal or in any other case unable to charge or describe pain, custom designed ache evaluation equipment should be used, including the:

• Faces pain Scale – Revised (FPS-R), designed to be used with kids. It includes a sequence of faces with expressions that are intended to painting diverse tiers of ache, corresponding to ache ranges 0 to10. the dimensions have been used in numerous companies, together with adults who have trouble expressing or describing pain verbally.

• Face, Legs, Interest, Cry, Consolability scale, designed for use in kids, is a tool to manual assessment of actions and behaviors which can be associated with ache. The device has been used in lots of settings with nonverbal adults to evaluate expressions of pain.

• Pain assessment in superior Dementia Scale, typically used to evaluate ache in sufferers who've advance dementia. the dimensions consist of five behaviors that can be interpreted as nonverbal signs of ache consisting of respiration traits, poor vocalizations, facial expressions, frame language, and consolability.

once an intensive pain assessment is completed, the hospice nurse translates the evaluation facts to devise and enforce powerful nursing interventions. Interventions range depending on whether ache is acute or continual. Acute ache is typically nociceptive ache and lasts for a quick time. it's also secondary to “cutaneous and deep somatic tissue damage or visceral organ insult” and can be further classified as somatic or visceral. each somatic and visceral pain can come to be persistent if the reason of the ache isn't always addressed. furthermore, pain can in addition be categorized based totally on its person. for instance:

• Neuropathic ache is regularly defined as taking pictures, burning, or surprising.

• Myofascial pain manifests as sharp and localized, but then will become stupid and achy over time.

• Radicular ache is defined as sharp, stabbing, and radiating from the neck or backbone to the fingers or legs.

• Somatic pain arises from harm to muscle, bone, or connective tissue. it is usually described as sharp and is properly localized. however, depending on the source, it could be stupid and achy.

• Visceral ache is related to internal organs or viscera. it is usually described as dull, diffuse, gnawing, or cramping and radiates far away from the web page of harm.

timely and repeated documentation of the sort, individual, and timing of the patient’s pain is vital. pain should be assessed each 2 hours. while interventions are carried out, pain ought to be reassessed within half-hour of the intervention. Documentation should encompass all components of the pain evaluation, in addition to the effects of any interventions.

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Chapter 4: Nonpharmacological Pain Management

Non-Pharmacological Interventions for Pain

ache is one of the most distressing signs that patients face at the give up of life. maximum typically, allopathic (technological know-how-primarily based) interventions, consisting of drug therapies, are carried out to alleviate pain. In some cases, medicines are not totally effective in providing ache comfort. Nondrug interventions may help to improve comfort, relaxation, and mood at the end of existence and may be used on my own or as adjuvants to medicinal drugs. What's greater, most nondrug interventions do now not require a provider's order for implementation.

a few nonpharmacological interventions are targeted to a selected symptom; others are used to enhance fashionable well-being and to promote a sense of peacefulness. Nonallopathic interventions, while mixed with allopathic interventions, are known as complementary modalities. while nonallopathic techniques are used rather than allopathic interventions, they're referred to as alternative strategies. together, complementary and opportunity medicine is called CAM.

Common Complementary Interventions for Pain

Complementary interventions are primarily energy based and many are rooted in traditional Chinese medicine (TCM), which emphasizes balance among mind, body, and spirit. Common interventions used for pain relief include acupressure/acupuncture, aromatherapy, massage, mindfulness, music therapy, and reiki. An overview of these interventions. However, the most widely used interventions will be discussed in more detail in the following sections.

Acupuncture/Acupressure

Acupuncture is a form of TCM that is used to reestablish the flow of energy through the meridians. In acupuncture, needles are used "to open channels between the patient's internal and external environment, allowing energy to move more freely". Many patients seek acupuncture after other means of pain management have failed. Acupuncture enhances the production of endogenous opiates and stimulates the release of corticosteroids. It is likely that the effects of acupuncture are secondary to the stimulation of nerves near the acupoints, but the exact mechanism of action is not well understood. Nonetheless, anecdotal reports indicate that the onset of pain relief from acupuncture is swift. Acupressure is similar to acupuncture in that acupoints are stimulated for the relief of various symptoms. However, in acupressure the practitioner applies pressure with their hands to restore the flow of energy through the meridians. Acupressure has been found to be effective for reducing pain associated with dysmenorrhea, low back pain, chronic headache, and traumatic pains.

Aromatherapy

Aromatherapy is the medicinal use of essential oils to manage symptoms or to enhance general well-being. Small amounts of essential oils can be applied topically on the skin or inhaled through the olfactory system. Even when applied to the skin, the olfactory nerves are the main site of action for the effects of aromatherapy. As part of a holistic approach to overall comfort and wellness, aromatherapy can be an effective adjuvant for reducing stress, enhancing alertness, and alleviating pain. Some commonly used essential oils that are potentially useful in the end-of-life care setting include:

- Clary sage
- Geranium
- Lavender
- Peppermint
- Roman chamomile

In the hospice setting, it may be best to diffuse essential oils using a diffuser rather than placing oils directly on the patient's skin as patients can accidentally transfer oils to the eyes or mucus membranes on his or her hands. Also, some cases of allergic reactions to essential oils have been reported, so it is best to gather information about all previous use of essential oils prior to implementation. If applied topically, essential oils should be diluted with a carrier oil such as almond oil or sunflower oil to avoid skin irritation.

Transcutaneous Electrical Nerve Stimulation (TENS)

Transcutaneous Electrical Nerve Stimulation (TENS) is the use of low voltage electric currents delivered through electrodes on the body for the purpose of pain relief. The electrodes are part of the TENS unit, which is usually a portable, battery-operated device that is adjusted to the specific needs of the patient by a physician, physical therapist, or acupuncturist. Over the-counter versions of TENS units are available in most drug stores, but patients should always discuss use with their healthcare provider prior to use.

When using a TENS unit, the electrodes are placed on the skin near the site of the pain. Electrodes should never be placed on sensitive areas of the body such as near the eyes, the throat, on open wounds, or on the genitals. Pregnant women, those with implantable devices (including: implantable cardiac defibrillators), patients with epilepsy, and those with pain of unknown origin should not use TENS units. The benefits of TENS units in appropriate patients are not always realized quickly, but most patients report enhanced pain relief within 1 to 3 months of starting therapy.

Heat or Cold Therapy

The superficial application of heat is thought to reduce pain by easing muscle tension. The application of cold is believed to reduce swelling, thus relieving pain. External application of heat or cold can alleviate pain from acute injury, surgical pain, and inflammation secondary to cancer. Cautious use of heat or cold therapy is warranted in patients with insensitivities due to neuropathies or vascular insufficiencies, metastatic tumors, cognitive deficiencies, or bleeding. Hot or cold

packs should never be placed under a patient. When applied, the patient's skin should be monitored every 15 minutes for safety.

Music Therapy

Music therapy involves more than offering music for a patient's enjoyment, although in many cases, this may be helpful to patients as well. Music therapy is provided by a professional Music Therapist (MT) as a complementary intervention to promote relaxation and to improve physical and emotional well-being. The MT develops a therapeutic relationship with the patient through singing, song writing, improvisation, and actively listening to music of the patient's choosing. The MT individualizes care based on a thorough assessment of the patient and an evaluation of the effectiveness of implemented interventions. In palliative care settings, music therapy is one of the most frequently used and most effective complementary interventions for pain reduction. The work of the MT complements the work of other members of the interdisciplinary team by enhancing patient comfort and promoting quality of life.

Reiki

The word reiki is an aggregate of two jap words. collectively, these words mean "spiritually guided life pressure energy". Reiki is a shape of strength restoration that turned into determined via Dr. Usui in the overdue nineteenth century. all through a reiki remedy, the affected person can be seated or recumbent. The practitioner channels electricity from the established existence pressure to the patient for a particular patient-directed intention. Palliative care sufferers have said that following a reiki treatment, they felt calmer, more secure, and greater centered. Reiki has also been located to be beneficial for improving average best of existence and perceived properly-being on the quit of life.

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Chapter 5: Cancer Care

The early incorporation of supportive care and next referral up to date hospice care in oncology is important. This includes the withdrawal of healing treatments and disproportionate interventions for the most cancers and that specialize in sympup-to-datem relief-based up updated holistic take care of the affected person. Oncologists are accountable updated ensure the smooth transition of the affected person and circle of relatives from competitive lifestyles maintaining treatment and up-to-date supportive end-of-existence care.

General Considerations

The Medicare Hospice benefit up-to-date created in 1983 up-to-date care for individuals on the quit of existence. At that point, maximum individuals admitted up to date hospice had a analysis of most cancers. up to date updated advances in cancer treatments, those patients may be up-to-date hospice care in their final weeks or days of lifestyles.

Eligibility Considerations

affected person eligibility for hospice is decided by using the hospice up-to-date in consultation with the referring and/or patient's attending up to dater updated. up to date MAC hospice LCDs, cancer with remote metastases at presentation or progression from an earlier degree of disorder up-to-date metastatic sickness is eligibility proof for hospice care with both:

• A continued decline in spite of remedy

• A patient declining further sickness-directed remedy

A patient with a cancer diagnosis up-to-date also meet a MAC's "Decline in medical status recommendations." The decline LCDs country: patients could be up to date up to date have a lifestyles expectancy of six months or less if there may be documented evidence of decline in medical fame up to date at the suggestions listed. in view that determination of decline presumes assessment of the patient's popularity

over time, it's far essential that both baseline and observe-up determinations be pronounced wherein suitable. Baseline facts can be installed on admission up to date hospice or via using existing records from facts. these modifications in medical variables practice up to date patients whose decline is not up-to-date up to date be reversible.

development of disease is characterized by worsening scientific reputation, up to date, up-to-date and laboraup-to-datery consequences, and useful repute (purposeful evaluation score). positive

cancers with poor prognoses (e.g., small cellular lung most cancers, mind most cancers, and pancreatic cancer) can be hospice eligible with out pleasant the alternative criteria in this phase.

whilst addressing cancer, up-to-date your MAC or other regulaup to datery our bodies for 3177227fc5dac36e3e5ae6cd5820dcaa and unique guidance. most cancers is a devastating analysis that many people still companion with loss of life. Upon preliminary diagnosis, -individuals embark on a treatment adventure this is overwhelming with clinical jargon, new healthcare companies, unknown outcomes, and fluctuations of desire amid the distressing consequences of the disorder and its treatment. although people are residing longer with most cancers, and a few cancers can be up to date continual in nature, dwelling with most cancers can initiate tension and a loss of control for the affected person and own family. people residing with most cancers rely upon circle of relatives or chosen support people up to date assist them for up to dateupdated office visits and remedy, assist up-to-date decipher and absorb disease and remedy information, and provide bodily and emotional support for remedy and probable up to date-of-lifestyles care. Oncology healthcare carriers' paintings with a heterogeneous patient populace up to datetrying upupdated offer the affected person and circle of relatives with clean verbal exchange, the most effective remedy options, and a healthful stability of desire for the future. regardless of continuous development in remedy efficacy and survival outcomes, most cancers remain the second main motive of death for each gender and at some stage in the lifestyles span. person most cancers is 2nd up-to-date coronary heart disorder, even as pediatric most cancers is 2nd up-to-date accidental loss of life in maximum age groups through childhood.

The American Cancer Society (ACS) expected 1.6 million new cases of all cancer web sites and an expected six hundred,000 new instances of most cancers in the America in 2017. however, a new most cancers analysis is no longer synonymous with a constrained existence expectancy, and will in all likelihood suggest a

destiny navigating the healthcare machine over the extended survival period. historically, computer for cancer patients was specially contained inside hospice care. Now, most cancers experts are incorporating the precepts of computer and an interprofessional method to affected person care. because of scientific and nursing certifying boards regulating the distinctiveness of palliative remedy and laptop, the increasing quantity of healthcare professionals certified in computer gives more alternatives for the supportive care of most cancers' sufferers actively worried in curative remedy, receiving highly-priced physiological supportive treatment, and sooner or later dealing with imminent death.

For the general public of the 20th century, cancer was extra frequently recognized in a later degree. in step with the national cancer Institute, global cancer cases are anticipated to growth from 14 million to 21 million and cancer deaths from eight million to 13 million from 2012 to 2030. most cancers care has advanced inside the remaining twenty years no longer simplest as a result of adjustments in remedy efficacy however additionally because of the interprofessional version of

aid currently offered. Healthcare purchasers opt for sincere and more entire data concerning diagnosis, prognosis, symptom burden, and survival advantages related to remedy. As a end result, healthcare

professionals are studying greater compassionate communication skills and recognizing the significance of shared decision making with the affected person, own family, and designated caregivers.

all through the various stages of most cancers, the desires of the patient and family are complex, requiring special attention to bodily, psychological, social, and spiritual distress. arrangements for the proper care setting and adequate caregiving help at some stage in treatment and at the cease of life calls for understanding of specialized treatment companies, available alternatives, and an

experience-primarily based know-how of ways pleasant to healthy the desires of the patient and family dwelling with most cancers.

although many most cancers professionals are skilled in EOL care and recall it relevant to their practice, laptop is emerging as an interprofessional forte with sturdy support for affected person, family, and the clinicians worried in most cancers control. evidence suggests that computer groups assisting in cancer care enhance patient care and reduce prices to the own family and healthcare system by using cultivating an identical trade of information matching the dreams of the patient with treatments provided. similarly, pc teams support the clinicians running so carefully with a affected person population dwelling with a existence-threatening disorder by way of supplying emotional and educational aid. in which a couple of clinicians representing one-of-a-kind specialties are worried, laptop teams offer the hub of conversation and specialized religious and bereavement support to patients, families, and clinicians that cancer care calls for. laptop should be incorporated into every cancer affected person’s remedy, such as the ones pursuing curative or lifestyles-prolonging treatment plans, and whether or not or no longer laptop professional groups are available, cancer treatment groups ought to get hold of schooling in the essentials of laptop.

destiny implications for cancer care will encompass helping patients through complex treatments provided in an expansion of treatment locations and supporting overdue effects of treatment as seen with survivorship. old and young, it's miles crucial to observe that the level of increase and improvement, familial assist, physiological stamina, psychological reserve, and network assets all present giant attention for the remedy of adults and youngsters residing with most cancers. The countrywide participating Centre for cancer has issued guidelines standardizing care offerings for youngsters and younger humans with cancer in England and Wales which might be relevant to this affected person populace in the u.s.. Key pointers encompass the following: take care of kids and young adults up to 19 years of age must be supplied in age-suitable centers; there may be get entry to to treatment-unique scientific know-how and appropriately trained staff; and coordinated care have to be reachable across the continuum of disease presenting age- and culture-suitable facts.

Breast Cancer

in line with the ACS, breast cancer is the most regularly happening girl malignancy in the United States of America, and about 266, a hundred and twenty new instances of invasive breast most cancers are envisioned to be diagnosed in 2018. more or less 2,550 new cases may be diagnosed in men while 63,960 women might be diagnosed with in situ breast most cancers in 2017. kind of eighty-three% of these in situ cases may be ductal carcinoma. approximately forty-one,400 ladies in the usa are anticipated to die of breast cancer in 2018, despite the cutting-edge decrease in mortality that has befell considering 1989. Breast cancer is second to lung cancer as a cause of most cancers demise in women. but incidence and death charges have regularly decreased within the past 10 years due to reductions in the use of Menopausal Hormone Therapy (MHT), early detection, improved remedy, and accelerated attention.

Breast cancer is a complicated sickness representing a rather heterogeneous affected person population. It originates in separate cellular sorts: ductal and lobular. Ductal cancers are the maximum commonplace, with invasive ductal cancer representing about 80% of all ductal most cancers cases. Lobular breast most cancers hardly ever takes place by myself, is greater hormonally influenced, and happens predominantly in premenopausal girls. Breast most cancers can be Estrogen Receptor (ER) nice or terrible (ER+ or ER–) and Progesterone Receptor (PR) fine or bad (PR+ or PR–). most breast cancers are hormone touchy at the same time as non–hormone sensitive breast cancers are found to be faster developing. The goal of treatment for women with early-stage breast most cancers is curing the ailment and stopping metastasis, death, and recurrence at the same time as minimizing side effects from remedy. The aim for women diagnosed with past due-degree or metastatic breast most cancers is to maintain pleasant of lifestyles, control the ailment, extend survival, and restrict remedy-associated toxicities. Pathogenesis involves DNA mutation by using genetic alterations or environmental sellers, possibly occurring early in existence. handiest 5% to 10% of all breast cancers are inherited and carry the breast most cancers–unique gene. growth elements then boom the boom charge of those mutated cells; ultimately, modern alteration of precise oncogenes, or the lack of suppressor genes, results in superior metastatic ailment. The surroundings for breast most cancers increase in older girls isn't always as favorable as that in younger women because of the decrease in stimulating increase component in particular for breast cancer and diminishing mononuclear mobile reactions. Breast most cancers in older women has a tendency to be greater differentiated and richer in hormone receptors than in young ladies.

This renders nonmetastatic tumors greater receptive to remedy. however, instead of treating cancer based totally at the affected person’s age, it's miles essential to treat each tumor in my opinion, addressing the characteristics of the tumor and the desires of the patient.

Signs /Staging

maximum generally, breast cancer offers as a painless lump this is hard and has uneven edges. different signs may also encompass palpable axillary nodes, dimpling, nipple pain or turning inward,

changes in breast skin, nipple discharge, or bone ache because of metastasis. Breast most cancers is evaluated with mammography, percutaneous needle aspiration, biopsy, and hormone receptor assays. treatment is determined by using cellular kind, stage, boom charge, and hormone receptor repute. The Tumor/Node/Metastasis (TNM) type machine evaluates number one tumor length (TX to T4), regional lymph nodes (NX to N3), and remote metastasis (MX to M1), even as staging from 0 to IV is used further to the TNM dedication. Staging levels increase with tumor length and node involvement; handiest degree IV represents metastasis. fee of growth can be decided by S-phase or Ki-67 exams.

Disorder Control

treatment options recollect tumor length, quantity of spread, tumor traits, and affected person choice regarding QOL. the ones alternatives encompass lumpectomy, easy mastectomy with sentinel node biopsy, radical mastectomy, radiation (outside and brachytherapy), and systemic therapy (chemotherapy and hormonal remedy). Imaging research used for staging consist of puppy/CT, bone scan, ultrasound, and CT.

Surgical Treatment

options to be had for the surgical control of breast most cancers encompass lumpectomy, elimination of frequently multimodal and surgical operation will regularly be mixed with other modalities including radiation and/ or systemic remedy. In early breast cancer, long-time period survival from breast retaining surgical treatment coupled with radiation is same to that of mastectomy.

Axillary node involvement is an essential prognostic indicator in breast cancer. Biopsy of axillary sentinel lymph node is an essential device for diagnosing lymph node involvement. remedy for Ductal Carcinoma in Situ (DCIS) consists of excision of the tumor, radiation, and/or hormonal therapy with tamoxifen or aromatase inhibitors (for postmenopausal girls).

remedy for stage III (locally advanced tumors) entails an aggregate of surgery, chemotherapy, and radiation for neighborhood manipulate of the tumor and to lower the hazard of distant recurrence.

Chemotherapy

factors to be evaluated whilst considering chemotherapy encompass bodily well-being, staging, tumor kind, comorbidity, patient choice, and drug efficacy. Tumors rich in hormone receptors are less sensitive to chemotherapy than tumors terrible in hormone receptors. Chemotherapy notably increases survival rates even in older ladies, who can also require greater common dose adjustments for tolerability. the controversy over chemotoxicity in older adults is a result of the heterogeneous population and the underrepresentation of older adults in medical trial.

Radiation Therapy

external beam radiation and brachytherapy are cutting-edge radiotherapies applied for the remedy of breast cancer. external radiation is the standard radiation remedy given after lumpectomy and is given to the entire breast with a further dose (“raise”) to the website of the tumor from an external supply. remedy publications remaining between three and seven weeks with each day remedies for sufferers with early-level breast cancer. In brachytherapy, radioactive substances, or “seeds,” are placed in or near the tumor bed (tumor location prior to surgical excision). Older women assessed with ok practical reserves tolerate radiation in addition to their more youthful opposite numbers.

Hormonal Remedy

ER+ breast cancer is responsive to tamoxifen (a nonsteroidal selective ER modulator), which notably reduces the lengthy-time period threat of recurrence, and became till currently the most prescribed adjuvant endocrine therapy. third-era aromatase inhibitors have shown advanced results in evaluation to tamoxifen in sickness-unfastened survival fees, time to recurrence, and prevalence of metastases in postmenopausal girls. each tamoxifen and AIs include awesome facet effects that must be considered on a person foundation. Hormonal remedy is considered the same old of take care of treatment of hormone receptor high quality breast most cancers. In premenopausal girls with early-degree breast cancer, the use of hormonal remedy for five years or longer became related to a 40% drop-in recurrence rate and 30% improvement in mortality charge. Systemic adjuvant remedy of breast most cancers is maximum beneficial for ladies with a life expectancy of 2 or more years. 1/3-generation AIs have shown statistically sizeable development in survival in sufferers with advanced breast cancer compared with tamoxifen or progestogens.

Palliative Care

remedy of women with metastatic breast most cancers is palliative. using aggregate remedy presents a few advantages over single agents as the front-line choice. The jap Cooperative group 1,193 trial randomized seven hundred women among combination remedy with doxorubicin plus paclitaxel and unmarried-agent remedy with either doxorubicin or paclitaxel. combination therapy offered a higher reaction price (47% vs. 36% vs. 34%, respectively) and longer median time to sickness development (8 vs. 6 vs. 6 months, respectively), but no difference in the typical survival (22 vs. 19 vs. 22 months). the use of aggregate remedy is suitable whilst response is needed at the expense of improved hazard of remedy toxicity, which include rather symptomatic sufferers with coming near organ harm. there is confined information demonstrating the prevalence of mixture therapy beyond 2nd-line therapy, even though it could be taken into consideration in heavily pretreated patients or people with tremendous tumor burden. Anthracycline-based totally aggregate treatments together with doxorubicin plus cyclophosphamide, epirubicin with cyclophosphamide and fluorouracil, or doxorubicin and docetaxel plus cyclophosphamide offer

general response price between 50% and 70%. No single routine has been identified because the gold preferred for ailment manipulate or symptom control.

Prostate Cancer

The ACS estimated 164,690 newly diagnosed cases in the year 2018 and about 29,430 deaths. Prostate cancer is common in North and South America, Australia, South Africa, Northwestern Europe, and the Caribbean; conversely, it is rare in Asia and Africa. Incidence rates remain highest in African American men and Jamaican men of African descent (70% higher than in whites). Incidence rates have progressively decreased and death rates fell on average 3.4% yearly from 2005 to 2014. Potential risk factors for prostate cancer include age, race, family history, and dietary factors. However, the only well-established axillary lymph nodes, and mastectomy. Treatment is risk factor remains increasing age. Approximately 60% of all prostate diagnoses are in men 65 years and older, while 90% occur in men 50 years of age and older. Over 95% of prostate malignancies are adenocarcinomas, primarily occurring in the periphery of the prostate. Grading systems represent the glandular pattern, degree of differentiation, or a combination of the two. The cancer cells metastasize via posterior local extension, lymphatic system, and blood vessels to distant lymph nodes,

bone, liver, lungs, and adrenal glands. The most common sites of bone infiltration are pelvis, lumbar and thoracic spine, femur, and ribs. The 5-year survival rate for all stages of prostate cancer is 98.6%. The great majority of patients present with localized (79%) or regional (12%) disease. Of these, there is a 100% 5-year survival, while those with metastatic disease at presentation (5% of cases) have a 5-year survival rate of only 29.8%.

Signs/Symptoms/Staging

Early and localized stages of prostate cancer generally do not present with symptoms. Hallmark symptoms that occur more frequently in locally advanced cancer are usually associated with urinary outlet obstruction: frequent urination, urinary hesitancy, inability to urinate, nocturia, and dysuria. Impotence, painful ejaculation, bloody urine or semen, pain, and stiffness in the lower back, hips, or upper thighs are additional symptoms suggestive of malignancy. Since many of the common symptoms may mimic other conditions, it is common for men to postpone medical consultation. Symptoms of malignant prostate disease usually do not subside, which distinguishes prostate cancer from benign disorders. Digital rectal examination and/or prostate-specific antigen blood test are the most commonly used screening methods for prostate cancer. However, the optimal timing and indication for routine screening remain controversial among medical societies. Diagnosis of prostate cancer is confirmed by prostate biopsy guided by transrectal ultrasonography. Additional imaging studies may be obtained when there is suspicion for metastatic disease.

Disease Management

Treatment depends on age, life expectancy, overall health status, Gleason Score, and stage. The Gleason Score is a grading scale using numbers 1 to 5 that refer to the appearance and activity of the cancer cells. The Gleason Score adds the grades of the two most prevalent patterns of the cells. Scores may range from 2, representing nonaggressive cancer, to 10, signifying the most aggressive cancer with the greatest potential of spread. Treatments have increased cure rates in men with early and localized tumors, while interventions for those with advanced disease focus on palliation of symptoms and prolonged survival. Expectant management is referred to as "active surveillance" and involves watching for new signs or symptoms of disease progression between regular checkups and testing. Therapy is recommended at the onset of symptoms. Advantages of active surveillance include avoidance of side effects from unnecessary treatment of small indolent cancers. Total prostatectomy, radiation therapy, and androgen deprivation therapy are the modalities used for treatment of localized disease.

Surgery

Surgery is a treatment option for individuals with early-stage tumors. Hormonal therapy is usually indicated after surgical treatment, particularly for patients with evidence of pelvic lymph node involvement. Since surgical intervention can result in impotence and incontinence, it is important that treatment discussions involve the spouse or significant other in order to enhance emotional coping and physical healing.

Radiation

Radiation therapy is offered as two different therapeutic approaches: (a) external beam—external application and (b) brachytherapy—internal application of radioactive seed implants. Radiotherapy complications include gastrointestinal toxic effects such as diarrhea, urinary incontinence, and erectile dysfunction. Men diagnosed with prostate cancer are usually older, and treatment burden may be overwhelming if the patient's condition is compromised by comorbidity or presence of a geriatric syndrome. Patients with hypertension, diabetes mellitus, and pelvic inflammatory disease are not considered optimal candidates for radiation therapy secondary to late effects that may occur and affect QOL.

Palliative Care

Androgen deprivation therapy has been the mainstay systemic treatment of prostate cancer since the 1940s. Responses such as improvement in bone pain in patients with metastatic disease are approximately 70% to 80%. Side effects associated with endocrine manipulation are mild compared to cytotoxic therapies. Hormonal therapy delays disease progression at the expense of potential cardiovascular toxic effects. Cytotoxic chemotherapy is mostly used for the treatment of hormone-refractory prostate cancer. Cytoxic therapy is associated with an improvement in survival but remains mostly a palliative intervention. Bone targeted therapies such as denosumab and zoledronic acid are used for prevention of skeletal events such as pathological fractures as well as

palliation of metastatic disease to reduce bone pain. Long-term use of either agent carries the risk of osteonecrosis of the jaw, thus requiring caution in its use

Lung Cancer

Lung cancer remains the leading cause of cancer death in men and women in the United States and the world with an estimated 234,030 new cases and 154,050 deaths projected for 2018. The incidence has reached a plateau in women and declined in men, reflecting the trends in smoking patterns over the past few decades. Most individuals diagnosed with lung cancer are former, rather than current, tobacco smokers. Only 10% of lung cancers occur in individuals with no prior smoking history.

The overall 5-year survival rate is 18.6%, reflecting the poor prognosis associated with this disease. Lung cancer is divided into two main groups, non–small cell lung cancer and small cell lung cancer (SCLC). NSCLC accounts for more than 80% of all lung cancers and is further characterized by histology as squamous cell carcinoma, large cell carcinoma, and the most prevalent type, adenocarcinoma. SCLC represents approximately 15% of lung cancers. It typically has a very aggressive clinical course with poorer prognosis. Five-year survival varies between 2% and 30% depending on the stage as compared to 80% in NSCLC. SCLC is classified as limited or extensive stage. It is usually detected at a more advanced stage, growing rapidly and metastasizing early in the disease trajectory.

The outcomes of lung cancer are closely defined by staging, with earlier stages being potentially curable while advanced stages are being treated palliatively with generally short survival. Outcomes in NSCLC are further defined by specific genetic mutations that may be potentially targeted by new biologic agents.

Individuals with locally advanced NSCLC (Stage IIIA) have a median survival of 14.4 and 16.8 (Stage IIIB) months, respectively, when treated with a combination of operation, chemotherapy, and radiation therapy. In another study, patients with Stage IV NSCLC had a median survival rate of 14 months after being treated with chemotherapy and radiotherapy. Individuals with limited disease SCLC who are treated have a median survival of 15 to 20 months, and extensive disease remains poor at approximately 10 months.

About one third of surgically resected NSCLC recur in the ipsilateral or contralateral lung and can metastasize to various sites including bone, liver, adrenal glands, or brain. More than 80% of recurrences occur within 2 years and are complicated by distressing symptoms. Individuals with SCLC are at a much higher risk for brain metastases as compared to those with NSCLC (80% vs. 30%) and are considered for prophylactic brain radiation. Therapeutic strategies to manage brain metastases include surgical resection, stereotactic radiosurgery, and systemic therapy. These may improve the overall survival for a median of approximately 1 year.

Signs/Symptoms/Staging

Tissue diagnosis and staging workup determines the type and extent of disease. Accurate staging is critical to determine if surgery is appropriate. PET/CT combined with cranial imaging is more accurate in identifying metastatic disease than conventional imaging (CT scan of chest, abdomen, and pelvis; bone scan; and cranial imaging) in NSCLC. In NSCLC staging, the TNM classification groups patients according to the size and extent of the tumor (T), lymph node involvement (N), and the presence or absence of metastatic disease (M). Seventy five percent of patients with NSCLC have locally advanced or unresectable Stage IV disease at the time of diagnosis. SCLC has its own staging system. Two thirds of SCLC patients have metastatic disease at diagnosis. Once staging is complete, the treatment plan is individualized and based on the stage, lung cancer genomics, and biomarkers, which predict outcomes and treatment responses, in addition to performance status and the ability to tolerate treatment.

Disease Management

Because SCLC is considered a systemic disease, surgery is not a treatment option. Chemotherapy alone or with radiation is the usual treatment for SCLC with a high rate of early remission but frequent recurrences. NSCLC has more treatment options such as chemotherapy, radiation, surgery, immunotherapy, targeted therapy, and kinase inhibitors. However, surgical resection remains the only potential curative treatment for patients with NSCLC presenting with surgically resectable disease. Surgery is recommended for all adults with good performance status. There is no difference in the overall survival between younger and older individuals. Newer surgical techniques, such as the VATS, have provided a minimally invasive approach with similar long-term survival rates as thoracotomy. Current treatment options will include surgical resection, systemic therapy, radiation, or combinations of these modalities depending on the stage.

Radiation Therapy

Radiation therapy is an important treatment modality in lung cancer. It may be used as an alternative for older patients with NSCLC who are not considered surgical candidates due to comorbid disease states or for those who decline surgery. Combined modality treatment with radiation therapy and chemotherapy in patients with nonresectable advanced-stage NSCLC and limited-stage SCLC is the standard of care for physiologically fit individuals. Radiation has a major role in palliation of symptoms, in particular the pain associated with bone metastases, management of dyspnea and hemoptysis from tumor invasion, and control of symptoms associated with brain metastases such as seizures, confusion, nausea, vomiting, and headache.

Chemotherapy

Chemotherapy, checkpoint inhibitors, and targeted therapies are the mainstay in advanced NSCLC. Systemic therapy presents survival benefit as an adjuvant therapy for high-risk early-stage NSCLC. Standard chemotherapy includes one of a number of chemotherapy doublet combinations given for four cycles. Double therapy including a platinum-based drug is more effective than single

agents or best supportive care in first-line therapies. Concurrent chemoradiotherapy is superior to sequential treatment, but has an increased toxicity. Single-agent chemotherapy is preferred for patients who have a poor performance status and multiple comorbidities. Therapy of lung cancer has been dramatically impacted over the last decade by the advent of targeted agents, which demonstrate in many scenarios superior outcomes compared to cytotoxic therapy. Precision medicine, tailoring therapy to specific genetic alterations, is an exciting new area that holds profound implications for improvement of response and overall survival.

Treatment options for SCLC are usually limited to chemotherapy and/or radiation. Therapeutic regimens for limited-stage disease consist of concurrent chemotherapy and radiation, followed by prophylactic cranial irradiation, which can increase survival by about 5%. Chemoradiation is difficult to tolerate due to side effects associated with the toxic chemotherapeutic agents and the burden of concurrent radiation.

Extensive-stage SCLC is treated with chemotherapy alone. Slotman et al. (2007) demonstrated that prophylactic brain irradiation in patients with extensive SCLC who responded to chemotherapy reduces the incidence of symptomatic brain metastases and prolongs disease-free and overall survival. Studies of elderly patients suggest they also benefit from treatment for SCLC. However, data on this age group is limited as the elderly population remains underrepresented in clinical trials.

Targeted therapies are aimed at specific tumor pathways in NSCLC. The antiepidermal growth factor receptor (EGFR) inhibitor erlotinib reduces proliferation and survival of tumor cells by inhibiting tyrosine kinase. Bevacizumab, a recombinant vascular endothelial growth factor (VEGF) monoclonal antibody, prohibits angiogenesis, the development of the tumor's vascular supply. Blocking angiogenesis limits local and systemic metastases. Targeted therapies are being used in combination with chemotherapies or as front-line therapy according to current NCCN guidelines. As second-line therapy, erlotinib is especially effective in a subpopulation of females, nonsmokers, individuals who are of East Asian descent, and those who have a histology of adenocarcinoma. Recently, bevacizumab has been shown to be effective in combination with platinum-based chemotherapy for nonsquamous cell advanced NSCLC. Additional targeted agents such as cetuximab, an EGFR inhibitor, and sunitinib and sorafenib, anti-VEGF receptor agents, have been investigated.

Colorectal Cancer

New cases of colorectal cancer (CRC) in the United States in 2018 are estimated to reach approximately 97,220 for colon and 43,030 for rectal cancer. The projected combined death rate has declined 4.1% since 2005 for those 50 years of age and older due to improved screening procedures and significant advances in surgery, radiation, and chemotherapy. Conversely, the incidence rate for adults under the age of 55 years has increased 1% per year secondary to lack of early screening when symptoms arise and lack of healthy eating habits and leading active lifestyles. CRC ranks fourth among the most common malignancies in the United States and was the second

leading cause of cancer death in 2017 at an estimated rate of 50,260. It is a disease of aging, as the median age of individuals with newly diagnosed CRC is 70 years. In minorities, particularly African Americans, cancer-related mortality remains higher than in whites due to social and economic disparities.

CRC is difficult to diagnose at an early stage without screening because patients are usually asymptomatic. Screening to detect polyps and cancer is important for all those deemed to be at risk and for those over the age of 50 years. Diagnosis of CRC in the older adult is especially challenging because many of the common symptoms associated with CRC such as constipation, change in bowel patterns, and fatigue may be inaccurately attributed to the aging process.

Approximately 50% of patients present with hepatic metastases or develop them during the course of the disease. Because the portal vein drains the blood supply from the colon, the liver is the most common site of metastasis for advanced disease. Isolated lung or liver metastases may be considered for surgical resection. As the disease progresses, patients may experience bowel obstruction. Widespread metastases to the abdomen (carcinomatosis), lung, and/or liver are often the cause of death.

Signs/Symptoms/Staging

Most cancers of the bowel are moderately or well-differentiated adenocarcinomas. These cancers usually develop as a result of progressive colonic polyp mutations. Screening for and removal of potentially malignant or pre-malignant polyps can prevent the development of more advanced cancer. TNM staging has been modified to correspond with the Astler–Coller Dukes system. This staging process evaluates the depth of bowel wall penetration by the tumor, lymph node involvement, and presence of distant metastasis. The accuracy of the staging in high-risk Stages II and III is associated with the number of nodes surgically removed. Staging ranges from Stage I to Stage IV, with overall survival declining from greater than 90% in Stage I to less than 10% in Stage IV.

Disease Management

A complete staging workup includes a physical examination; colonoscopy with biopsy; pathologic tissue review; baseline CT of the chest, abdomen, and pelvis; complete blood count; chemistry profile; and carcinoembryonic antigen (CEA) determination.

Surgery

For respectable colon cancer, surgery remains the standard treatment. Tumor location, blood supply, and lymph node patterns in the area of cancer determine the extent of resection. Examination of a minimum of 12 lymph nodes is necessary for accurate staging. Laparoscopic advances have allowed the use of minimally invasive surgical procedures to resect colon cancers without increasing recurrence rates. Early mobility, return of pulmonary function, and decreased ileus and adhesion formation have made this procedure desirable for many patients, especially

those with advancing age and comorbid illnesses. Surgical management of rectal cancer involves resection with preservation of anorectal sphincter function and sexual and urinary function whenever possible. Preoperative combined modality therapy (chemotherapy and radiation) has resulted in significant reductions in tumor size and decreased rates of local recurrence in rectal cancer. However, it is associated with increased toxicity when compared to surgery alone.

Radiation Therapy

The role of radiation therapy is not well defined for colon cancer Debate over the value of pre- or postsurgical radiation therapy for rectal cancer continues. Although pre- and postoperative radiotherapy has been shown to reduce local recurrence when compared to surgery alone, neither intervention resulted in a statistically significant improvement in overall survival. Preoperative chemoradiotherapy doubled the rate of rectal sphincter-sparing operations and lowered the rates of local recurrence, acute toxicity, and long-term toxicity.

Chemotherapy

Current guidelines for adjuvant therapy do not recommend chemotherapy for individuals with Stage II disease. However, patients with advanced CRC do have a survival benefit from newer chemotherapeutic regimens and targeted agents. Current therapy includes bevacizumab, VEGF blocker, plus FOLFOX infusional 5-fluorouracil (5-FU), leucovorin, oxaliplatin, FOLFIRI (infusional 5-FU, leucovorin, and irinotecan), capecitabine, or 5-FU/LV. The two EGFR monoclonal antibodies, cetuximab and panitumumab, have also been shown to be effective. Genotyping of tumors may help to predict which therapy is most beneficial to an individual. For example, patients with advanced CRC who do not have a mutated form of the gene KRAS may benefit from cetuximab and chemotherapy. Overall survival is improved with single-agent cetuximab when other treatments fail. More recently, immunotherapy has shown promising results with the use of immune checkpoint inhibitors like nivolumab and pembrolizumab. They can be beneficial for advanced CRC that has progressed following conventional treatments. A phase II study with heavily pretreated patients with pembrolizumab showed the objective response rate and progression-free survival of 40% and 78%, respectively.

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Chapter 6: Heart Diseases

An Overview of End-Stage Heart Disease

The majority of end-stage heart disease patients have Heart Failure (HF) as it is the common endpoint for most cardiovascular diseases such as Hypertension (HTN), atrial fibrillation, valvular disease, AMI, cardiomyopathies, and Coronary Artery Disease (CAD). HF is not a disease, but rather a complex clinical syndrome evidenced by the ventricular inability to fill or eject blood, generally as a result of structural or functional impairment. Cardiovascular diseases are more common with aging. Recognition, treatment, and survival from many cardiovascular diseases (e.g., AMI, CAD, HTN) have improved. These patients, however, eventually suffer the long-term effects of the heart damage incurred during the acute event or from having a chronic condition such as decreased left ventricular (LV) function resulting from cardiac muscle damage. While many medications and interventional devices can prolong life, these patients can eventually develop HF as they age and medications or devices become less effective or do not improve the QOL. By 2050, one in five Americans is predicted to be over the age of 65; therefore, the incidence of HF is expected to worsen significantly. According to the most recent numbers from the American Heart Association (AHA), one in five people in the United States is at risk for developing HF, with one in eight death certificates listing HF as the cause of death.

Evidence-based therapies for HF have improved long-term survival, and this has simultaneously led to a heavy symptom burden resulting in a poor QOL. HF Stage D, in particular, is associated with a poor prognosis, limited therapies, and a short life span. While a majority of hospice admissions for cardiovascular disease (heart and stroke) has surpassed admissions for cancer diagnosis, there is still a low referral rate for HF patients. Referrals to hospice and palliative care tend to occur in the last 2 weeks of life. Because of the low rate of hospice utilization and pattern of late referrals in end-stage heart disease, there is a need for the infusion of palliative care (PC) principles into general care. In addition to the human cost of HF, there is a high societal cost as well. HF continues to pose heavy economic burden in the United States with a projected total cost increase from $31 billion in 2012 to $70 billion by 2030. Much of this cost is driven by frequent hospital admissions and readmissions. PC, with its focus on symptom management and decisional support, has the potential to ameliorate some of the burden of HF.

A significant sequela of Mis is heart failure, although not all heart failure is caused by Mis or ischemia. AG-ACNPs frequently diagnose and manage heart failure. Ensuring accuracy of terminology, differentiating between left and right heart failure, and identifying the functional classification of heart failure are fundamental skills for AG-ACNPs to possess.

Heart Failure Is a Condition of Aging

An estimated 6.5 million people have HF, and this is expected to increase by 46% from 2012 to 2030, putting the incidence at 8 million people with HF over the age of 18. The projected increase in HF incidence and prevalence is strongly associated with the aging of the baby boomers. Almost 75% of those diagnosed with HF are older than 65 years.

HF is the number one hospitalization diagnosis for older adults, with the number of hospitalizations increasing 150% over the last 20 years. Despite the prevalence of HF in older adults, cardiovascular clinical trials continue to exclude the typical older adult HF than average (50–65 years of age vs. older than 75 years) and the samples are skewed toward males and those with fewer comorbidities. The trials target one specific therapy, whereas it is usual for there to be concurrent medications in the general HF population. Because of selection criteria, the participants are generally compliant with low risk of disability. Clinical practice is very different from the controlled environment of a clinical trial, yet this type of research forms the basis of HF evidence-based practice. This disconnection between clinical trials and clinical practice makes it challenging to make generalizations to commonly affected HF populations (e.g., non-Caucasian, elderly, frail) and offers sound evidence on which to base everyday practice. These limitations should be kept in mind when reviewing the literature in this chapter as well as on your own.

Classifying and Determining Prognosis in Heart Failure

There are two complementary classification systems to describe HF. The AHA and the American College of Cardiology Foundation (ACCF) collaboratively developed criteria that describe the stages in the development and progression of HF. The New York Heart Association (NYHA) Functional Classification System focuses on a patient's exercise capacity and symptom status. The patient with advanced heart disease is classified as Stage D or NYHA Class III or IV, both of which are associated with significant clinical dysfunction resulting from symptoms and affecting the QOL. Symptoms include dyspnea, fatigue, or angina. The NYHA functional classification scale is very useful for clinicians who treat HF patients. The scale provides a benchmark to determine whether the condition is improving, staying the same, or getting worse and to easily communicate the severity of the patient's symptoms. The scale is also used in research studies to evaluate the effectiveness of new treatments. This variability of symptoms is one of the difficulties in predicting the end of life in HF. There are weeks or months when patients seem to favorably respond to the guideline-based therapies, and other times the same treatments are no longer tolerated and the patient requires multiple hospitalizations. Often it's a balancing act, titrating medications to keep the patient stable patient. In most of these trials, participants are younge and out of the hospital without exacerbating another problem when you think the end may be near. Patients will often explain away an increase in symptoms such as breathlessness as "just getting old" or a process of "deconditioning." Patients and families often think of HF as episodic. If the patient is symptomatic, they will say that the patient has HF, but when symptoms abate, the patient and family often believe that the patient is no longer in HF. Rarely do they think of HF as a terminal

diagnosis. Yet the same patient may be stable for many months or even a year or two and then die suddenly due to a new cardiac event or a concomitant or new medical problem.

Difficulty predicting prognosis presents barriers to appropriate treatments, such as when to deactivate devices or referral to hospice, for the last stage of HF. Hospice referral in the United States requires a predicted 6-month prognosis, yet many providers are hesitant in making this determination when the course of HF is often unpredictable. This also complicates decision making about what treatment options should be considered and how helpful treatments will be.

The Role of Comorbidities in Heart Failure

Coexisting conditions such as diabetes mellitus (DM), renal disease, anemia, obesity, pulmonary disease, sleep-disordered breathing (SDB), and depression also factor into HF, with 40% of HF patients having five or more comorbidities comorbidity impacts both decision making related to treatment options and response to treatments. DM is considered a cardiac risk equivalent. This means that a patient with diabetes is treated medically as if he or she has already had a cardiovascular event. Renal insufficiency, often as a consequence of poor renal perfusion, is common in HF. Renal insufficiency causes fluid retention and activation of the renin system, which leads to vasoconstriction and increases myocardial demand. Pulmonary disease also leads to symptoms such as dyspnea or fatigue, so it is important to ascertain whether the heart, the lungs, or both are the cause of the symptoms. SDB, common in HF, contributes to many cardiovascular symptoms such as pulmonary HTN and right-sided HF. When properly identified, SDB can be easily treated, leading to improved symptoms and functional ability.

Depression and anxiety are important as they relate to the pathophysiology of HF. Depression may independently worsen HF and increase the risk of death. Cortisol levels are persistently high in patients with depression, which, over time, leads to HTN caused by increased afterload and an increase in heart rate resulting from decreased ventricular filling time. Proinflammatory cytokines, which are activated in the stress response, reduce the available serotonin, which leads not only to depression but also to increased platelet aggregation and ultimately coronary artery occlusion.

Prognostic Models to Predict End of Life in Heart Failure

Clinicians and researchers have attempted to address HF's prognostic uncertainty by developing prognostic models. Some of the models are used for calculating a risk score for patients with chronic heart failure (e.g., Seattle Heart Failure Model [SHFM]), while others are for patients with acute decompensated HF (e.g., EFFECT, ESCAPE). The most widely used prognostic model for chronic HF is the SHFM. This model was developed using data from the Prospective Randomized Amlodipine Survival Evaluation (PRAISE) clinical trial to predict survival of HF patients, unlike mortality used in other models. Its primary purpose is as an aid for decision making and to determine the impact of treatment on survival in transplantation and other advanced therapies. The model can also be used for predicting the risk of death. Demographic and clinical characteristics such as age, gender, NYHA class, ischemic etiology, Ejection Fraction (EF), systolic blood

pressure, lab values, and pharmaceutical use are entered into the online tool. An estimate of survival is provided, allowing for comparisons between different types of interventions and procedures. When populated with these data, the model gives survival and mortality rates at 1, 2, and 5 years, as well as data for mean life expectancy. The SHFM, however, has limited application in PC prognostication, as it can overestimate survival. Bakitas et al. conducted a retrospective chart audit of HF outpatients and found that the SHFM predicted the median survival time at 2.8 years in their sample when the actual median survival time was 21 days. Although changes to the SHFM have been made to allow application to higher risk hospitalized patients, the SHFM needs further evaluation in an advanced HF population, and therefore, it may underestimate the risk in this population. This data suggests that the SHFM should be used with caution in PC populations.

Another prognostic model was developed using the organized program to initiate lifesaving treatment in hospitalized patients with heart failure (OPTIMIZE-HF) registry data. O'Connor et al. identified factors that predicted early posthospital mortality. Their analysis indicates that the following factors were predictive of both posthospital mortality and rehospitalization:

- Age
- Kidney, liver, or pulmonary (both reactive and obstructive) compromise
- Low systolic blood pressure, serum sodium, or admission weight
- Depression

End-Stage Cardiac Disease

Per MAC, hospice LCDs patients are considered to be in the terminal stage of heart disease if they meet the following criteria:

- At the time of initial certification or recertification for hospice, the patient is or has been already optimally treated for heart disease or is not a candidate for a surgical procedure or has declined a procedure. (Optimally treated means that patients who are not on vasodilators have a medical reason for refusing these drugs, such as hypotension or renal disease.)
- The patient is classified as New York Heart Association (NYHA). Class IV and may have significant symptoms of heart failure or angina at rest. Significant congestive heart failure may be documented by an ejection fraction of $\leq 20\%$ but is not required if it is not already available.

Documentation of the following factors support eligibility for hospice care:

- Treatment-resistant symptomatic supraventricular or ventricular arrhythmias
- History of cardiac arrest or resuscitation
- History of unexplained syncope

- Brain embolism of cardiac origin
- Concomitant HIV disease

Myocardial Infarction

Five distinct types of Myocardial Infarctions (MI) have been delineated. Documentation of the specific type is required for appropriate billing and classification.

1) Spontaneous: due to Acute Coronary Syndrome (ACS)
2) Non-ACS: ischemic necrosis due to supply/demand imbalance
3) Sudden cardiac death: no biomarkers available
4) Procedural related:
    - Related to Percutaneous Intervention (PCI)
    - Related to stent thrombus
5) Coronary artery bypass graft (CABG)-related & 5 Non-ST-Elevated Myocardial Infarction (NSTEMI)Qs NSTEMIs have a variety of causes that induce myocardial ischemia, including coronary reasons, noncoronary injury, and increased oxygen demands.

Coronary reasons include stable plaque, vasospasm, coronary embolism, and coronary arteritis. Noncoronary causes of NSTEMI include cardiac contusion, myocarditis, and cardiotoxins. Lastly, increased oxygen demands that can lead to NSTEMI include hypotension and all shock states, hypertension, tachycardia, aortic stenosis, and pulmonary embolism. EKG findings that suggest NSTEMI include transient ST elevation, ST depression, and/or new T-wave inversions in more than one lead. Cardiac troponin elevations are noted after 4 hours. Obtain echocardiogram to identify any wall-motion abnormalities, and obtain cardiology consultation.

ST-Elevated Myocardial Infarctions

ST-elevated myocardial infarction (STEMI) is a type 1 MI and is the result of plaque rupture with clot formation in a coronary vessel. The definition of STEMI includes ST segment elevation in two or more contiguous leads >2 mm in leads V2 to V3, or >1 mm in the other chest leads or limb leads. Activate the STEMI alert within the institution immediately. Obtain echocardiogram to assess cardiac performance, and identify any wall motion or valvular abnormalities

STEMI Treatment

STEMI treatment follows a specific algorithm. Be sure to activate the STEMI alert for your facility to mobilize appropriate resources. For PCI- capable hospitals:

1) Administer aspirin, 325 mg, chewed (buccal absorption)
2) Clopidogrel, 600 mg; or ticagrelor, 180 mg; or prasugrel, 60 mg orally x 1
3) Heparin, 60 units/kg (maximum 5,000 units), IV bolus
4) Transfer to cardiac Cath lab for primary PCI.

Atrial Fibrillation

Atrial fibrillation (AF) is a common problem for AG-ACNPs to diagnose and manage. Determine whether this is an existing or new problem. New AF must be evaluated and causative factor(s) determined in order to treat appropriately.

The decision to anticoagulated hospitalized patients with AF is com- plicated, and many factors should be considered, including the cause of AF, the duration of AF, and a comparison of the risks of stroke versus bleeding. Comparing the results of the CHA2DS,VASC score and the HAS-BLED scores to see which is greater will aid discussions with the patient and their family

Vascular Disorders

Aneurysms

Three types of aortic aneurysms exist, including ascending thoracic, descending thoracic, and abdominal aneurysms. Thoracic aortic aneurysms are commonly asymptomatic, with many being detected incidentally during other diagnostic testing of the chest. Risk factors include hypertension, connective tissue disorders such as Marfan syndrome or Ehlers-Danlos, bicuspid aortic valve, massive blunt chest trauma, cocaine abuse, and preeclampsia. Symptoms are a result of compressed anatomy as the aneurysm expands. Symptoms include shortness of breath, wheezing, dysphagia, and hoarseness. Mediastinal widening on chest X-ray and associated murmur of aortic regurgitation due to involvement of the bicuspid aortic valve are common exam findings. Indications for repair include symptomatic aneurysms and aneurysms over 5.5 cm in diameter for the general population, and 5.0 cm in those with bicuspid aortic valve. The Stanford classification denotes two types of aneurysms. Type A aneurysms extend from the aortic root through the aortic arch, and type B aneurysms extend along the descending aorta. Abdominal aneurysms are defined as dilatation of the aorta >3 cm. Screening abdominal ultrasounds are recommended for all men ages 65 to 75 with any smoking history. Rupture is more common with aneurysms >5 cm and pose a 12% mortality for men and 18% for women, which increases dramatically as the aneurysm increases in size. Aortic dissections commonly present with the patient complaining of sudden severe back pain or syncope. The pain is classically described as tearing or ripping in nature but more commonly as sharp or stabbing. An exam can reveal unequal pulses or pulse deficits in approximately 30% of patients. Computerized tomography angiography (CTA) scans are the gold standard for diagnosing aortic dissections. Preoperative management and medical management for nonsurgical candidates include aggressive blood pressure management. IV labetalol prn or labetalol or esmolol infusions to achieve systolic blood pressure <120 mmHg and a heart rate close to 60 beats per minute. Definitive surgical intervention is essential, as every hour delay substantially increases mortality. Endovascular repair is the recommended approach for repair.

Limb Ischemia

PAD can lead to chronic or acute limb ischemia. Modification of risk factors can stop the progression of atherosclerosis and its associated sequelae. Monitor ankle brachial indexes for progression of chronic limb ischemia.

Ankle-Brachial Index

The Ankle-Brachial Index (ABI) is the systolic pressure of the posterior tibial artery divided by the highest systolic blood pressure of either brachial artery. The ABI is both a sensitive and specific metric to diagnose PAD. Segmental blood pressures in the thigh, calf, ankle, and metatarsal regions can help pinpoint the blockage.

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Chapter 7: Neurological diseases Care

Anatomy

Understanding the anatomy, physiology, and function of the brain and spinal cord is essential to understanding the signs and symptoms of disease processes and injury patterns. The circle of Willis defines the vasculature and is important to understand patterns of deficits seen with ischemic strokes. Cranial nerves and dermatomes are important to assess for neurological deficits. Unless an AG-ACNP elects to work with a neurology, neurosurgical, or neuro- critical care team, recalling these items requires frequent review to master.

Dermatomes

Subarachnoid Hemorrhages

Classic signs of an aneurysmal Subarachnoid Hemorrhage (SAH) include a report of a severe headache with a rapid/abrupt onset, often referred to as a “Thunderclap” headache. The headache is commonly described as pulsatile, and some patients report hearing blood rushing. Associated symptoms include the following:

- vomiting
- decreased level of consciousness
- hemiparesis
- seizures
- neck stiffness that occurs about 6 hours after headache onset

Exam findings of meningeal irritation include Kernig sign (inability to fully extend the knees when the thigh is flexed at the hip and knee is at a 90-degree angle) and Brudzinski sign (hip and knee flexion with passive neck flexion). Management of SAH is focused on monitoring for and prevention of rebleeding and vasospasm.

Predicting Outcomes of Intracranial Hemorrhage

A frequent question by families of patients with intracranial hemorrhage is “What will be their outcome?” Two scoring systems can be used to aid clinicians in predicting outcomes. The Intracranial Hemorrhage score grades the ICH severity and predicts mortality at 30 days. Whereas, the Functional Outcome in Patients with Primary Intracerebral Hemorrhage score identifies patients with intracranial hemorrhage who are likely to attain functional independence at 90 days postadmission. These scores can be used to help guide goals of care discussions with patients and their families.

Treatment of Intracranial Bleeding

The cornerstone of treatment for all intracranial bleeding includes the reversal of coagulopathies and Blood Pressure (BP) control. Patients with ICH should have a neurosurgical consult. Blood pressure goals can vary by neurosurgeon and neurocritical care providers. Cardene and labetalol drips are commonly used to achieve blood pressure goals quickly and avoid swings in blood pressure. Ensure blood pressure goals are well documented in both the order set and progress notes.

General Considerations

Disability, impairments are tied to the neurological conditions and the limit cases of activities. The degree of their influence on a particular person is defined by the overall health condition of a person. There are numerous ways that the neurological disease can develop, and this is disease-specific and individual. This creates a problem in the care during the disease progression or even towards its end. Such issues entail the uncertainty of the disease progression, cognitive change, complex therapies, and issues and problems faced along with the genetically related diseases. Amyotrophic Lateral Sclerosis (ALS), Parkinson's disease, Multiple Sclerosis (MS), and Huntington are conditions that are commonly witnessed in hospice as far as neurological diseases are concerned. See the Care Guideline to Alzheimer disease and other dementias care, in this section above. This does not imply that other diseases based on the neurology cannot be treated by hospice care, the patient would only need to have an ailment that is in its terminal state and a prognosis of six months or less.

Eligibility Considerations

Under a variety of clinical conditions, neurological conditions may allow prognosing a six months or shorter life span. The regulations of Medicare mandate that there be a record of adequate clinical data and additional documentation to justify the certification of persons as having a terminal disease with life span of six months or less in case the disease takes its natural course. Palliative interventions and the care plan should be shaped by the identification of certain structural/functional impairments along with the possible referenced limitations of activities. General criteria of eligibility on hospice may include:

- Significant dysphagia
- Aspiration pneumonia
- Hypogonadism or lack of puberty--repeated urinary or respiratory infections (e.g., pyelonephritis) (usually severe).
- Severe deterioration of physical condition- generalised weakeness and lack of mobility and activity.
- Cognitive impairment Cognitive confusion or subtle cognitive impairment.
- Weight loss

- Other important compound symptoms:
  - Pain

- Spasticity
- Nausea

In the case of the neurological illnesses, consult your MAC or other regulatory authorities to get up to date and specifics.

The chapter is dedicated to the management of stroke, Chronic Neurological Disorders (CNDs), coma and brain death patients. Even though Stroke and CNDs are individual, unique, and quite different in many aspects, they have a cluster of similar symptoms and treatment demands. Whereas there are instances of individuals, who have suffered a stroke showing a full recovery or near-full recovery of the experience, societal individuals who have suffered a stroke due to CNDs tend to have none, or minimal to transient responsiveness to the curative therapies. Severe stroke and CNDs have the symptoms which can be enhanced through palliative treatment and a substantial amount of evidence has shown that interdisciplinary Palliative Care (PC) leads to higher Quality of Life (QOL) when it comes to managing the symptom.

This chapter gives an account of the prevalent symptoms that are experienced due to stroke and CNDs such as Alzheimer disease, Parkinson disease, Multiple Sclerosis (MS), and Amyotrophic Lateral Sclerosis (ALS). Comorbid conditions that often come with the later stages of the said illnesses are also described and interventions meant to help with the management of the symptoms are also indicated. The issues that surround coma and brain death and the management of them are quite unique and thus they are described separately in the chapter. Pediatric coma and brain death issues are as well discussed. Gerontological issues are included since all of the mentioned disorders were more likely to be encountered later in adulthood as opposed to MS.

Prevalence, Disease Course and Pathogenesis

Stroke

In the United States, stroke is the fifth leading cause of death and the leading cause of severe long-term disability, with someone having a stroke every 40 seconds and someone dying of a stroke, on average, every 4 minutes. It is estimated that each year 795,000 people will experience either a new stroke (77%) or a recurrent stroke (23%). Eighty-seven percent of strokes are ischemic, 10% are hemorrhagic, and 3% are a subarachnoid hemorrhage. The prevalence of stroke is higher in older adults, African Americans, American Indians/ Alaska Natives, persons with lower levels of education, and persons living in the southeastern United States. Racial and ethnic disparities in stroke care continue to be a major challenge for healthcare providers, with the burden of stroke remaining consistently higher among ethnic minority groups. Seventeen percent of all strokes occur in people who are older than 85 years. The incidence of stroke is higher in men than in women between the ages of 45 and 84 years. However, this changes after the age of 85 years with women having a higher incidence of strokes than men. While stroke is most common in older adults, it does occur in teenagers, children, infants, and unborn babies. The overall incidence of stroke in children 15 years of age and younger is 6.4/100,000. In contrast to adults, children have

as many ischemic as hemorrhagic strokes. Most people with stroke will survive the initial illness. As a result, there are an estimated 6.8 million stroke survivors in the United States with a projection of an additional 4 million by the year 2030. Stroke accounts for more than 130,000 deaths in the United States each year, which is 1 in every 20 deaths. There are two types of strokes: ischemic and hemorrhagic. Each type of stroke results in the brain being deprived of oxygen-rich blood leading to tissue hypoxia or death. An ischemic stroke results in a disruption of blood to a portion of the brain due to an occlusion of the cerebral artery by blood clots (emboli) or plaque and fatty deposits (thrombi). Most of the occlusions are as a result of the development of a thrombus. A thrombic event is a condition where blood vessels that are atherosclerotic result in total or partial obstruction of the blood circulation to a locality in the brain. The happens in an embolic event, in which a clot is formed somewhere in the rest of the body, say in the heart; breaks off, and passed by way of the arteries occupies a vessel in the brain. Atherosclerotic plaques are probable to happen at the bifurcations of arteries.

The most common causes of the plaque are the internal carotid arteries, vertebral arteries, and the points of intersection of the basilar and vertebral arteries. A stroke is a weakness in blood vessels that may burst releasing blood to the brain (hemorrhagic). Stroke may result in an abrupt loss of localized or global deficiency of the brain lasting more than 24 hours brought about by impaired cerebral vascular circulation. Incidents of rapture are caused by hypertension, aneurysms, trauma, erosion of vessels by tumors, arteriovenous malformations, the presence of a coagulation disorder of the blood, vasculitis, or even pharmaceuticals. This is due to the bleeding that takes place in the brain tissue which makes the pressure around the skull to increase thus killing the brain cells. Hemorrhagic stroke may develop within very short time leading to coma and in most cases death.

The impairment signs can be perceptual, motor, cognitive or speech signs. Some of the risk factors involve hypertension, heart rhythm disorders, high blood cholesterol and other lipids, diabetes mellitus, physical inactivity, family history, and genetics, the chronic kidney disease, and smoking. The consequences of an acute stroke will be based on the location and the size of the area that is affected by the stroke. Among the effects, there are paralysis, cognitive problems as well as speech problems, emotional problems, Activities of the Daily Living (ADLs), pain. Post stroke recovery is multidimensional and is exposed to varying outcomes. The higher the initial harm, the more protracted and prolonged the recovery and residual disability. Neurological functioning will start getting better a number of days following the occurrence of a stroke, and its maximum improvement is realized in the first 4 to 5 weeks. The aforementioned neurological and functional benefits may persist 36 months-6 months, albeit more gradually, i.e. plateaued.

The chronic neurological disorders encompass epilepsy, recurring migraines, stroke, and myelopathy, among others.<|human|>Chronic Neurological Disorders This includes epilepsy, recurring migraine, stroke and myelopathy among others.

Alzheimer Disease: The sixth number in medical causes of death in the United States is the Alzheimer disease. Estimates indicate that about 5.4 million individuals of all ages are living in

the United States with the Alzheimer disease and this figure is likely to continue increasing because the population is aging. Women live longer which explains the higher number of women compared to males with the Alzimmer disease. Advancing age is the greatest risk factor of the Alzheimer disease. The dementia with the Alzheimer type is estimated to be more than 13 percent of the adult population that exceeds the age of 65 or one in eight. The population between the age of 65 and especially above 65 years with Alzheimer disease is likely to nearly triple in the year 2050 with 5 million individuals expected to reach up to 16 million people. Alzheimer disease is a neurodegenerative disease and the most common type of dementia that is chronic, devastating, progressive, incurable and neurodegenerative. It is typified by serious neuronal and cognitive impairments, plaque accumulation as well as neurofibrillary tangles. The actions that have been identified to be known risk factors to the Alzheimer disease disease are aging, family history and genetic composition; other biological and lifestyle factors that have been linked to the Alzheimer disease include the biological and lifestyle factor. The pathophysiological mechanisms that initiate the onset and progression of the Alzheimer disease is not clear and complicated. Although no one event could be cited that triggers the occurrence of the Alzheimer disease, a number of hypotheses are being advanced to explain the disorder. The typical microscopic changes in the case of Alzheimer are the beta-amyloid bearing neurotic plaque and neurofibrillary tangles within the brain. Neurotic plaques are the consequence of the accumulation and aggregation of the beta-amyloid protein of the abnormal type between the nerve cells in the initial phase of the disease. It is believed that the beta-amyloid protein clumping in the brain is the cause of the inhibition of cell-to-cell signaling in a synapse and the subsequent inflammation that results in the impaired neuronal functioning and death. Neurofibrillary tangles are irregular accumulation of tau protein conglomerate in a helical structure within of maladjusted neurons. Formation of the neurofibrillary tangles leads to the impairment within the neuron and subsequent death of the neurons. The hippocampus and other parts of the cerebral cortex are seen to have neurotic plaques and neurofibrillary tangles. The hippocampus regulates data processing, memory formation of new memories and recalling the ancient memories. On the contrary, the cerebral cortex is involved in thinking and in making choices. Consequently, individuals with the Alzheimer disease show memory impairment, loss of executive functions, speech complications, psychiatric architecture as well as behavioral abnormalities, and later the disease spreads to a portion of the brain that facilitates an individual to perform simple body functions like walking or swallowing. The pathways and the rate of decline of the neurobiological process of the Alzheimer disease are not uniform. An average of 4-8 years are the death age of people with Alzheimer disease, still, the disease may take up to 20 years. The pathophysiological process leading to the occurrence of Alzheimer disease has been stated to start years, or even decades before the symptoms of the disease become evident. New guidelines and criteria on the diagnosis of the Alzheimer disease were offered in 2012 by the National Institute on alcoholism and the Alzheimer Association. Among the choices made was to view the Alzheimer's disease as two stages- mild cognitive impairment caused by Alzheimer and dementia caused by Alzheimer. Individuals with mild cognitive impairment as a result of Alzheimer have greater mild cognitive impairment than is

anticipated depending on their age and level of education, though the alterations do not always disrupt usual functions. The second stage, dementia as a result of Alzheimer, exhibits symptoms of memory, thinking and behavior which reconstruct the sections of the individual and make him/her incapable of performing in daily activities. Even the new guidelines suggest, to be used in research, a preclinical phase preceding the emergence of such symptoms as the memory loss. During this stage before the onset of clinical symptoms, however, some changes in the brain, cerebral fluid, and/or blood take place and are quantifiable.

- Parkinson Disease: The second progressive, neurodegenerative disease and more prevalent than the alzheimer disease in the United States is the Parkinson Disease, which occurs in about 1 million people in the country with up to 60,000 cases annually emerging. This is likely to be underestimated since diagnosis is ambiguous and might take decades before the diagnosis of the disease concludes in Parkinson. Life expectancy among the people with the Parkinson disease is not as good as it was initially believed to be. In one study, the interval between the onset of the disease with death was found to be between 7 to 14 years with variations being attributed to age during the time of diagnosis and year the research took place. The diagnosing dementia presence turned out to be a single predictor of death. The 14 th cause of death in the United States is the Parkinson disease. Its symptoms resembled other diseases, and there is no biomarker of the disease. These statistics are expected to increase with old age of the population. The mean age at which Parkinson disease can be diagnosed is 60 years, but 5 per cent to 10 per cent of the patients are diagnosed earlier in life at the age of less than 50 years. This has been demonstrated by the statistics where the men are more frequently affected than the women. Similar to the Alzheimer disease, it is not known exactly how the Parkinson disease is etiological in nature. The definitive risk factor of the development of idiopathic Parkerinson disease is known to be aging. The scientists believe that the genetics as well as the environment can contribute to the emergence of the Parkinson disease, yet they cannot determine the pathogenic contribution of each of them and in what proportion and/or dosage. The majority of the instances of the Parkinson disease lack clear evidence of genetic etiology. Pesticides/herbicide, exposure to metals, solvents and polychlorinated biphenyls (PCBs), 1-methyl-4-phenyl-1,2,3, 6-tetrahydropyridine (MPTP), which is a component in some forms of synthetic heroin and viruses are some of the potential environmental toxins that have been linked with Parkinson disease. Such characteristic elements of the Parkinson disease are dopaminergic neurons loss in the substantia nigra and the occurrence of Lewy bodies. Parkinson disease occurs once the cell of the substantia nigra start degenerating, and dying which leads to the progressive appearance of both motor and nonmotor symptoms. This is where the neurotransmitter dopamine is made and stored; degradation causes the depletion of the dolamine compound, a substance that is used in the conjoining of brain cells. Around 60 and 80 per cent. of the dopamine cells are destroyed before

clinical manifestation begins to occur. The main four motor symptoms include bradykinesia (i.e. delay in movement), rigor, decreasing the balance or postural problems and tremor at rest. The number of nonmotor symptoms related to Parkinson disease is extensive; some of them are minor, and others are disabling, such as depression, emotional fluctuations, swallowing and chewing dysfunctions, lack of sense of smell, speech, and urinary issues or constipation, skin, sleep disorders, dementia, orthostatic hypotension, cramps and dystonia, pain, sexual dysfunction, and fatigue and loss of energy. The development of the symptoms of the Parkinson disease in individuals changes in varying ways. The disease develops faster in some individuals and in others may take 20 years and above. Tendencies tend to originate on a single side of the body and later on end up being on both sides such that balance is disrupted resulting in major disability. The later stages of the Parkinson disease paralyze individuals on the bed and are often accompanied by complications, which include choking, pneumonia, falls, etc that may be the cause resulting to death. Treatment of Parkinson disease is not curative, but an early pharmacological intervention may prevent increased development of the symptoms. Levodopa is said to be the initial treatment of Parkinson. It is a precursor to dopamine. Though levodopa is taken due to its capability of going through the blood-brain barrier, it is prone to enzyme degradation. As a way of reducing the metabolism that levodopa is subjected to in the body, levodopa is sometimes administered with carbidopa that also reduces levodopa metabolism enabling more levodopa to reach the CNS to be converted into dopamine..

- Multiple Sclerosis: MS is a disease that appears when myelin is attacked by the immune system of the body. Myelin is a fatty material of the central nervous system which wraps and secures the nerve fibers. MS is believed to be immune mediated. The scar tissue due to the damage of the myelin is called sclerosis, which interferes or retards the speed of the nerve transmissions moving in and out of the brain. A great number of researchers suppose that MS is an autoimmune disorder. In the United States, MS is estimated to be living with between 250,000 to 350,000 individuals with an estimate of 200 new cases per week. MS may fall in the age range of 10 to 80 years; most its initial attack is found to be between the ages of 20 to 50 years. The prevalence in women is two or three times more often than that in men. The illness is more prevalent among the whites, particularly the Northern Europeans. It has a better genetic association, particularly first degree relatives expect of which there is also a high probability of developing MS approximately 1 in 40. The majority of MS patients may live a normal life span. Nevertheless, some fatal genetic variant of the disease occurs in a few weeks. The pathogenesis of MS is unclear. It is believed to be brought about by genetic susceptibility coupled with environmental influences which in effect cause an autoimmune assault on the myelin, nerve fibers and neurons in the brain and the spinal cord. Scar tissue develops sclerotic plaques that are hard in various parts of the CNS. At the initial stages of the disease, the myelin sheath is

damaged but the nerve fiber cannot be able to receive transmission of the nerve impulses by the nerve. The nerve impulses become completely blocked as the destroy of the nerve axons and leads to the permanent loss of function. MS is extremely intermittent in one individual to another. The nerves that are affected do not follow a definite pattern hence, it is hard to pattern out the disease progression. The presentation of MS. Relapsing-remitting is the most prevalent type of MS that includes the development of flare-ups that last a few days or weeks after which there is a remission, with not all of the symptoms being fully resolved. Primary-progressive MS is a type of MS that is not as prevalent whereby the effects of the disease progress with time with no remission. The secondary-progressive form of MS begins with a relapsing-remitting course but eventually develops into primary-progressive MS. Progressive- relapsing form is the least prevalent type, which begins as progressive form but changes to an acute worsening of the symptoms or appearance of new ones. Not all MS patients have the same symptoms; these symptoms are determined by the localization and size of the lesion of the myelin in the CNS. Symptoms may occur intermittently and mildly to the extreme and also vary widely across relapses. Fatigue, numbness, walking balance and coordination, bowel and bladder dysfunction, vision, dizziness, sexual dysfunction, pain, cognitive dysfunction, emotional shifts, depression and spasticity are the most frequently occurring symptoms.

- Amyotrophic Lateral Sclerosis: ALS or Lou Gehrig disease is a rare but speedy progressive neurodegenerative ailment that influences the upper and lower motor neurons causing progressive muscle atrophy of the free muscles in the arms and legs and also the trunk. ASL is more prevalent among men than women and it is usually more common to people aged between 40 and 60 years. Almost 20,000-30,000 Americans live with ALS at a certain point in their lives with around 5,000 new cases being diagnosed annually. ALS is a deadly ailment, majority of the victims succumb to respiratory failures. The median number of years to live above the symptom onset is 3-5 years; but still about one in ten will live 10 or even more years. The pathogenesis and etiology of ALS are uncertain and multifactorial as it may include the presence of genetic factors as well as environmental exposures. Nevertheless, studies have over the years identified few potential pathogenic processes that will be involved following the onset of the symptoms, which include dysfunction of the mitochondria, protein aggregation, free radicals generation, excitotoxicity, hypermetabolism, inflammation, and apoptosis. Furthermore, 5% 10 percent of the cases are inherited, which leaves the 90 percent of the cases determined as sporadic or in other words, there is no definite cause. Diagnosis is done mostly based on the medical history and the physical and neurological examination which reveal upper and lower motor neurons damage which could not be caused by other diseases. Vision, touch, hearing, taste and smell are not impaired whereas eye movements, bowel and bladder performance, and cognitive functions are sometimes impaired. It is progressive to result in loss of limb

strength, dysphagia, dysarthria, and finally respiratory failure as a result of ALS onset. The first symptoms are typical twitching, cramping, or stiffness; weakness of the muscles in an arm or a leg; nasal and slurred speech; or pain in swallowing or chewing. The disease spreads to other trunk body muscles leading to weakness and complete paralysis of the muscles as the disease develops further. This, at some point, is when muscles that control basic functions are affected and hence result in a difficulty in speaking, swallowing and breathing in the more advanced stage of the disease. Most of the deaths are caused by respiratory failure. Therapy of ALS is still targeted to the treatment of symptoms that are aimed at the management of QOL. A team of interprofessional is usually formed, comprising of a neurologist, nurses, physical therapists, occupational therapists, speech pathologists, psychologists and a host of others to assist in the maneuvering of patients. Medical treatments involve drugs as one of the therapeutic interventions such as riluzole that was brought into the market in 1995 to treat ALS and its use is up to date. The possible treatment interventions are on causal cure or changing therapy. Causal treatment entails direct attack of disease-causal genes in order to prevent their expression whereas modifying treatments entail having an effect on factors or mechanisms that have an effect on the pathological processes involving ALS.

- **Coma**: Coma is an effect of a brain damage that has occurred and is a state of unconsciousness that cannot be aroused intentionally and the individual does not consciously react to the outside influences. The patients in the deepest coma are not aware of self or surrounding; they do not respond in terms of sleep-wake nor do they respond in terms of hearing and seeing, and they exhibit reflexive and postural responses to external stimuli only. So far, accurate estimates of incidence and prevalence of coma in the United States do not exist because of the absence of surveillance, partial diagnostic codes on the coma recovery stages, and misdiagnosis in the evaluation of disorders of consciousness. The estimate of prevalence of vegetative state (now unresponsive wakefulness syndrome) and Minimally Conscious State (MCS) is though varying between 25,000 and 420,000 and 112,000 and 280,000 respectively. The condition of arousal and being awake depends on the operation of active cerebral hemispheres of brain and a regulatory system of the brainstem known as reticular-activating system. RAS is situated at the centre of the brainstem. There will be a change in the degree of consciousness or an altered state of coma in case one or both of the cerebral hemispheres are damaged along with the RAS area.

- **Palliative Care Issues**

  The disease process in patients with CNDs is rather prolonged and unforeseeable. A myriad of patient, family, care giving as well as reimbursement problems are linked with the prognostic uncertainty. CND patients are physically and emotionally demanding patients.

The care in a hospice or long care home might lessen the amount of caregiving the family needs yet might contribute to the sense of control loss along with the sense of isolation. Making the choice of the desired location to end-of-life care is dynamic with numerous factors to be taken in consideration; family members might not all agree to group members or the individual himself or herself. The nurse would be a nonjudgmental listener and would be able to assist searching options and working out through the decision-making process with the family members. Despite the type of care situation, individuals with CNDs lack adequate palliative/hospice care although the general QOL is very high as rated by the family members of terminally ill people. About 12.8% of patients under hospice care are diagnosed with dementia and would not leave hospice care within a year of 6 months. Healthcare providers do not readily appreciate that hospice services are very useful to the noncancer patients, and they are also not aware of the requirements or arrangements of setting up the hospice services at both their agencies or homes.

- The guidelines, created by the National Hospice Organization (NHO) on how to prognose noncancer diseases, such as dementia, stroke, and coma are aimed at being able to predict 6-month death to be admitted to the Medicare/Medicaid-reimbursed hospice services. These guidelines can be discussed as not very accurate at predicting mortality. Since advanced dementia is characterized by a prognosis that is not predictable, the NHO criteria will be restrictive, and even the obviously terminally ill patients will not be eligible. The hospice criteria of dementia are (a) The dementia at least to Stage 7-C according to the Functional Assessment Staging (FAST) scale and (b) the medical comorbid conditions which must be severe enough to justify medical treatment, whether the treatment was or was not chosen to treat the disease. During the chronic stage after stroke, the continued use of hospice can be determined using either (a) poststroke dementia equaling Level 7-C of the FAST scale; (b) poor functional (Karnofsky score of less than 50); or (c) poor nutritional (weight loss and serum albumin) criteria. Comatose patients are allowed into hospice in case of any four out of the following: (a) abnormal brainstem response; (b) lack of verbal response; (c) lack of withdrawal response to pain; (d) serum creatinine more than 1.5 mg/dL; or (e) age above 70 years, they qualify as hospice.
- The family members ought to preferably play a role in an ongoing process of decision making along the illness path. When it comes to illnesses linked with dementia, it is necessary to discuss and delegate some trusted family members to such a decision-making process early before any of them lose capacity. In the cases of such diseases, the anticipatory grieving aspect is seasoned extensively and the members in the family should be consoled to embrace their emotions. It is helpful to accept conflicting feelings both the fear and the wish that the death should take place as being common and normal. There should be initial dialogues regarding the normal progression of the disease which are future and concerned at the same time. The process of surviving through the late-stage chronic neurodegenerative disease is not only physically but also emotionally requiring. The same should not increase the stress of the patient with the knowledge of the burden on family or

professional caregivers. Conversations regarding the weight or issues of taking care must not be done in the presence of patient. The individual is supposed to feel loved and secure.

Brain Death

Improved medical technology capable of sustaining life and organ transplantation protocols has created circumstances in which the individual may have cardiopulmonary functions, but is brain dead. Toward the need to define and determine brain death, the President's Commission (1981) developed the Uniform Determination of Death Act that allowed brain death to be a legal definition of death. Declaring a person dead requires that either his or her heart function has ceased or his or her brain no longer functions due to irreversible damage. There is continued controversy and ongoing research to improve accuracy in determining irreversible brain death, and a variety of confirming tests have been suggested. These include Electroencephalography (EEG), computed tomographic angiography, MRI, and testing of cerebrospinal fluid. Major differences exist in the guidelines used to determine brain death in major neurological hospitals in the United States.

Direct damage to the brainstem (head trauma, intracranial hemorrhage, infarcts, and mass lesions) or diffuse damage to neuronal metabolism (drugs, renal failure, and hypoglycemia) are the mechanisms by which irreversible brain death may occur. Patients who are being evaluated for brain death are most likely being treated in the ICU or ER. Families need significant education and support throughout the diagnostic evaluation and the process of treatment withdrawal. If brain death has occurred as the result of a long illness with multiple organ failure, they may have had time to absorb information and develop realistic expectations about their loved one's survival, as opposed to a sudden unpredictable trauma. It is important to have staff available who are comfortable discussing the implications of brain death, the need for withdrawal of treatment, and how to incorporate any previous wishes of the patient and requests by the family.

Truog et al. (2001) recommend that families be given a very straightforward but compassionate explanation that the patient died when his or her brain died and that treatment is being withdrawn from someone who is already dead. This may relieve feelings of guilt that the withdrawal of treatment contributed to the patient's death. Due to the extent of the brainstem injury, brain-dead patients do not feel pain. Reassurance that they are not suffering and that measures to ensure patient dignity are in place is important as well as incorporating any cultural or spiritual rituals. Nurses can help to establish an environment where the family feels supported and valued.

Before withdrawing life support, families should be offered adequate time to process and cope with the information they have been given and to spend time with the patient if requested. Discussion of any possible organ donation should be separate from the notification of brain death and should be done by those trained to have such discussions.

Thrombolytics

Initially, make sure that his patient is not hypoglycemic or hypothermic as hypoglycemia may present these symptoms of stroke. Pre-administered blood pressure objectives: SBP under 185 and

DBP under 110. Might include labetalol 10-20 mg IV boluses, or nicardipine or clevidipine bolus 30.gr /kg, with a maximum dose of 90mg (including 10% in bolus, used as a bolus, over 1 minute); rest of the dose given over 60 minutes Given within 3 hours of onset of stroke symptoms or the last time the patient was known to be well rtPA may be given up to 4.5 hours but often contraindicated: patients older than 80 years, patients Mechanical thrombectomy should be considered in case the symptoms fail to disappear. The use of tenecteplase in the same patients deprived of contraindications to IV fibrinolysis is another option rather than rtPA (single IV bolus of 0.25 mg/kg, until 25 mg) and meanwhile allowed to receive mechanical thrombectomy.

Endovascular Therapy

Immediately after the administration of thrombolytics, noninvasive imaging of intracranial vessels need to be taken. Stent retriever against thrombus should be applied in patients that have the following. Optimal outcome occurs when the reperfusion to TICI grade 2b/three gets received within 6 hours of stroke onset.

Neuroimaging

The two commonest tests used on acute neurological conditions are CT (or CAT) scanning and MRIs. CT scans and specifically MRIs may put the beginner through a test. The CT scan is a procedure that projects X-rays to the patient over different angles, and the scanner records the dissimilarity between the X-rays adapted and the X-rays flowing through the body. This attenuation is what this difference is called. The level of attenuation varies depending on the density of the tissue which is quantified in the units of Hounsfield. Tissues with dense locality like the bone absorb more radiation, hence lesser portion is detected by the scanner. The low density body tissues like the lungs absorb less radiation; hence, more signal is recorded by the scanner. The difference in color in the images is observed to be attenuation.

MRI Interpretation

MRIs are a magnetic and generate magnetic fields. In the event that the patient is exposed to the high magnetic field the hydrogen ions will be oriented to the magnetic field. Radiofrequency (RF) pulse is used and is capable of altering the direction and alignment of the hydrogen ions within the body. As the RF pulse is switched off these ions will then re-align themselves with the magnetic field and give out a signal. Such a signal is different in the strengths of tissue applied to it (e.g., fat, muscle, water). The MRI scanner records the range of different signals of different planes of magnetization, which form weighted images. MRIs would also be able to ignore or suppress some signals to produce alternative views of the materials in the resultant images. T1 and T2 images enable emphasis on various tissues depending on the time when RF pulses take place. It differs have two important differences: In Tl, there is a bright tissue; fat; and in T2, two bright tissues; fat and water. Tl is the most Anatomical image that can be referred to an anatomical structure or can be used to differentiate between fat and water. On the other hand, there is a light Cerebrospinal Fluid (CSF) in T2 because of high water contents. T2 is mostly more commonly used. The fluid

attenuated inversion recovery CSF signal is inhibited. It is useful to assess the structures of the CNS such as the periventricular areas, sulci as well as gyri. Plaques in multiple sclerosis, subtle post-stroke edema, and pathology can be detected using FLAIR whereby CSF can potentially cause interference with interpretation. The Diffusion-Weighted Imaging (DWI) integrates the T2 images as well as diffusion of water. Ischemia can be treated with the use of DWI view and can be used to detect physiological changes that may occur within minutes (e.g., immediately again stroke).

Pain Management

The pain that a patient is undergoing requires identification of the type of medication that is necessary to treat. Moreover, it will help to identify the acuity or chronicity of the pain, which will obtain more information to know the urgency or acuity of the situation. The concept of chronic pain refers to the pain that continues or takes more than 3 to 6 months. The patients experience both acute and chronic pain at the same time and should be treated using different methods and it is understood that they will be used complementary to each other. Caution should be observed not to cause overmedication particularly when the elderly and medically weak individuals are involved. Non- pharmacologic strategies and pharmacologic interventions will always be part of the acute pain management strategies. Suggestions No. Nonpharmacologic measures often involve that of the rest, ice, heat, elevation, compression and stretching. Specifically, multimodal pain management approach must be sought to prescribe pain management medication. Multimodal strategies are able not only to appeal to various receptors, but also to enhance other treatments and reduce the necessity of using narcotics. The nonopioid drugs can be those which are nonsteroidal anti-inflammatory drugs, including ibuprofen or diclofenac cream, acetaminophen, gabapentin, pregabalin, Lidoderm patch, as well as epidural catheter with bupivacaine. The use of opioids is often necessitated in the treatment of acute pain in the surgical and trauma population, among other sources of pain, including sickle cell crisis, nephrolithiasis, pancreatitis, etc. The use of opioids is extremely addictive and, therefore, a weaning and withdrawal strategy needs to be discussed with the patient when using the agent. The most frequent ones are Fentanyl, hydromorphone, and morphine that are prescribed to hospitalized patients. Patients with kidney dysfunctions should not take any morphine as metabolites may accumulate hence leading to overmedication and sedation. Older patients of the adult age experience physiologic changes, which result in reduced recognitions of pain. Furthermore, alteration with normal aging process and progression of chronic conditions, alters the pharmacodynamics and pharmacokinetics of the older population. Prescription of pain drugs should therefore be done with extreme care..

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Chapter 8: Pulmonary Care

General Considerations

Patients and their family members may be referred to hospice care after long battles with chronic pulmonary diseases such as COPD, asthma, bronchitis, and tuberculosis. Patients may also have other lung or lung-specific disease. Care is directed toward controlling and reducing the symptoms of the specific lung pathology. Supportive and skillful care is directed toward comfort and relief of coughing, dyspnea, feelings of tightness, and other complaints and problems.

Eligibility Considerations

Patients are considered to be in the terminal stage of pulmonary disease (various forms of advanced pulmonary disease) if they meet the following criteria: Cases of severe persistent lung illness which is defined as debilitating dyspnea on exertion, unresponsive or unresponsive to bronchodilators, leading to diminishing functional capacity; such as bed to chair life, fatigue and cough.

- Advancement of end-stage pulmonary illness, which is supported through increasing emergency room visits or inpatient hospitalizations as a result of pulmonary infections or respiratory failure or increasing physician home visits before initial certification.
- Road air Hypoxemia at rest as indicated by PaO2 [?] 55mmHg or PaO2 [?] 59mmHg; or oxygen saturation SpO2 of 89-93% as indicated by oxygen saturation monitors (arterial blood gases or oxygen saturation monitors).
- Single left atria heart failure due to pulmonary disease.
- Accidental but purposeful progressive loss of weight of over 10 percent in body weight over the last six months.
- Resting tachycardia > 100/min

➢ In treating pulmonary, consult your MAC or other regulations authorities to get up to date and particular advice.

The third most valuable cause of death is chronic lung disease, that is, COPD, which is the most prevalent death cause associated with respiratory disease in the United States. The clients with COPD have pulmonary complications and a range of extrapulmonary complications brought about by the disease which include, malnutrition, pain, anxiety, and depression. On further development of COPD, it is not only the seventh most frequent cause of disability but also the 12 th most common cause of morbidity. Smoking is the cause of about 80-90 percent of the COPD cases. With COPD, eighty percent of the patients do not bequeath their lives due to other causes other than

smoking. COPD is variable but progressive and the progression of the disease is determined as gradual deterioration with occasional cycles of deteriorating diseases. PC needs to be applied at the diagnosis stage as COPD is a progressive condition, and the number of complications, and disability increases. The National Consensus Project on Quality Palliative Care (2013) argues that PC has the goal of preventing and alleviating suffering and promoting the optimal Quality of Life (QOL) to patients and their families, independent of the disease stage or other treatment requirements. Nevertheless, there is a lower rate of prescribing PC to patients with COPD than those with other chronic diseases due to the oscillating and unpredictable nature of the progression of this disease. Among a team-based approach and integrating the PC should be included in the initial diagnosis, and it must be individualized to the requirements of the patient and his or her symptoms based on the stage of the COPD and ensuring the Quality of Life (QOL) is offered to clients all through the disease. PC is patient based and family based. Despite the different goals of care of each patient, as well as of Mrs. S., and her family, PC is the one needed by the patient in reference to the stage of the disease and needs.

Definition of Chronic Obstructive Pulmonary Disease

The definition of COPD is the following: A prevalent preventable and treatable condition, [it] is a persistent, progressive, airflow blockage that is linked to an increased airway and lung inflammation with chronic response to air pollutants or gases. A combination of exacerbations and comorbidities is involved in the general severity of the disease amid individual patients. Pulmonary dysfunction of COPD represents airflow constriction and consists of mutilation of the various mechanisms of the lung such as inflammation of small airways, pulmonary alveoli that are destroyed with a reduced elastic recoil, and parenchymal tissue loss..

Emphysema, the destruction of alveoli with subsequent dysfunction of gas exchange, is one of the changes that may occur with COPD. Bronchitis, associated with excessive sputum production, may or may not occur with COPD but does not reflect the major airflow obstruction that is characteristic of COPD. The constellation of symptoms including dyspnea on exertion, chronic cough, and chronic sputum production suggests a possible clinical diagnosis of COPD; however, spirometry is required for a definitive diagnosis of COPD.

Causes

Smoking is a major precursor to the development of COPD. Individuals who have been smoking for 10 years begin to develop pulmonary changes associated with COPD. However, only 15% of smokers go on to develop COPD. Urban living and air pollution have also been implicated in the development and the exacerbation of COPD. Alpha-antitrypsin is a glycoprotein that appears to protect the alveolar walls from destruction; congenital deficiency of alpha-antitrypsin has been implicated in the diagnosis of COPD in persons who are nonsmokers. In the 15% of nonsmokers who will develop COPD, a deficiency of alpha-antitrypsin may be suspected.

Pathophysiology

Clients with COPD have a number of pathological changes in the bronchioles, lower airways, lung parenchyma, and pulmonary vessels. Exposure to cigarette smoke, toxic gases, air pollution, and noxious substances induce widespread tissue damage and inflammation. Smokers are thought to have increased levels of inflammatory cells, including neutrophils, macrophages, and T-lymphocytes. These cells damage the airways and stimulate proteases, which destroy connective tissue and overwhelm the number of protective antiproteases. As the pulmonary cells undergo repeated episodes of damage and cell repair, structural changes occur in the normal epithelium of the airways. Fibrosis and inflammation replace normal epithelium, contributing to weakness and narrowing of the airways. The resultant narrowing of the airways causes an obstruction to airflow, particularly expiratory flow. As airways weaken and collapse, air in the airways is unable to be expired and becomes trapped. The residual air causes a breakdown of the alveoli and further damages the structure of the lungs. Airflow limitation and obstruction of airflow are the hallmark consequences of COPD.

Diagnosis

COPD diagnosis is usually taken into account when a client has a chronic cough, sputum, or progressive dyspnea. The detailed history is required like what is the length and character of cough, is dyspnea at rest or activity, how much sputum is produced. The functional condition of the client should also be built as the baseline and followed throughout the disease. The history of smoking, recent exposure to poisonous substances, or contact with occupational fumes should obtain information required in formation of diagnosis. After the diagnosis of COPD is put into consideration, PFTs are required in order to prove the diagnosis objectively. PFTs determine the extent of obstruction of the airways.

The COPD stages are determined by the airway obstruction and are majorly quantified using three spirometric measures. The first one is the forced expiratory volume in 1 second (FEV1). Normal people inhale 80 percent of the air within 1 second via forced expiration. When compared to normal volume of air expiration in patients with COPD, there is limited airway capacity through FEV1 less than 80. The forced vital capacity (FVC) is used to measure the total amount of air that is expired following a maximal inhalation. The FEV1/FVC ratio of forced expiratory volume compared to FVC is supposed to be more than 70 percent. The FEV1 and the FEV1/FVC are both used in classification of both the degree of airflow limitation and hence the degree of disease. Indicatively, the spirometry of a patient whose FEV1 /FCV ratio is equivalent or lower than 70% and has a FEV1 of 60, then it is determined that his or her airflow obstruction is of moderate severity. Various stages of COPD can be explained like follows: (a) Stage I COPD: this symptom presents a mild obstruction of airways; (b) Stage II COPD: this is a symptom that demonstrates a moderate airway obstruction; (c) Stage III COPD: this symptom will show the severe airway obstruction; (d) Stage IV COPD: this is a symptom that will establish the very severe airways

obstruction. The degree of airway obstruction, as well as symptoms, are individualized in terms of pharmacotherapy and treatments..

Review of Symptoms and Physical Examination Findings

The client may complain of dyspnea upon exertion as well as at rest. Loss, or a reduction of the appetite, may result as dyspnea symptoms become more severe. Due to the higher efforts of breathing and slower food consumption, the older adult can complain of losing weight. Also, since the oxygenation is reduced, the family members or significant others might report mental status consequences. Sleep disturbances are experienced in up to 60 percent of patients with COPD, yet this symptom is often underassessed by providers or underreported by patients. Sleep quality is often fragmented, with episodes of dyspnea or coughing interrupting nighttime sleeping. Additionally, COPD patients may also experience sleep apnea, referred to as “overlay syndrome” when sleep apnea is diagnosed with COPD. The coexistence of sleep apnea with COPD is reported to be up to 60% in patients with COPD.

In the beginning phase of the disease, the patient may not exhibit any visible signs of lung disease. However, as the disease progresses, patients may present with a barrel chest, indicative of the hyperinflation and enlarged volumes that occur with advanced disease. At the advanced stages, patients may demonstrate signs of wasting, with prominence of sternocleidomastoid muscles and bitemporal wasting. Upon physical examination, auscultation of the lungs may reveal wheezing, rhonchi, or diminished lung sounds. With disease exacerbation, accessory muscle use will become visible—typically involving the sternocleidomastoid and trapezius muscle groups with intercostal muscle retractions as examples. A Hoover’s sign may be noticeable, which is a paradoxical inward movement of the lower rib cage that occurs with inspiration, secondary to increased lung volumes and a flattened diaphragm pulling the ribs inward instead of downward. Due to an increased AP diameter, the heart sounds may be distant. If the patient has advanced right heart failure (RHF) with an enlarged right ventricle, the patient may present with signs of RHF, such as jugular vein distention, an enlarged liver, and edema of the lower extremities.

Complications of Chronic Obstructive Pulmonary Disease

The cardiac, pulmonary and gastrointestinal dysfunction is one of the systemic and extrapulmonary complications of COPD. The pulmonary vascular vasoconstriction, atrial arrhythmias, pneumothorax, frequent respiratory infections (including pneumonia), respiratory failure, and malnutrition are some of the complications related to COPD. The condition of pulmonary vascular hypertension occurs due to the occurrence of vasoconstriction of the pulmonary arterioles as a consequence of the effect of hypoxia.. As the vasoconstriction worsens, increased pressure is reflected to the right side of the heart. Cor pulmonale, or enlargement of the right ventricle, occurs in response to increased pulmonary pressures and is a common feature of severe COPD. Cor pulmonale accounts for 25% of all types of heart failure and is more common in middle-aged and

older males. Cor pulmonale is a late sign of COPD and there is a poor response to therapeutic interventions. A pneumothorax, an accumulation of air within the pleural space, may occur due to rupture of emphysematous bullae. Bullae develop as the result of cell and alveolar damage associated with COPD. Recurrent respiratory infections, commonly viral and bacterial in origin, can cause a transient worsening of COPD symptoms and are the most common cause of acute exacerbations. COPD patients are likely to experience one to two acute exacerbations per year. Haemophilus and Streptococcus pneumonia infections are the most common bacterial infections. The rhinovirus is responsible for approximately 25% of acute exacerbations. Frequent infections are likely to worsen pulmonary function.

The development of malnutrition is multifactorial in the older adult and occurs in up to 25% to 50% of COPD patients. There is a 20% to 50% increase in metabolic demands associated with COPD as the normal work of breathing becomes more difficult and requires more effort.

Management of Stable Chronic Obstructive Pulmonary Disease

PC among the patients with COPD entails holistic care in the form of disease-focused care such as promoting independence and minimization of symptoms. The stage of the diagnosis and the symptoms of the patients often relate to the way they will be treated. In COPD of mild level the treatment is aimed at extending life. Conversely, patients with the very severe disease are treated with an aim of ensuring comfort and allowing the patient and family members to deal with EOL decisions and EOL problems. Smoking cessation, infection prevention, maximization of pulmonary functioning, and education are all current modalities of treating all COPD patients. Even in population aged over 65 years, smoking remains one of the primary risk factors of mortality and reduced QOL. The best interventions in the reduction of COPD progression are cessation of smoking. This is because smoking cessation program in older adults is able to enhance QOL and deterioration of COPD that may negatively affect the condition and as such, can eliminate the occurrence of complications that may result to COPD. The danger of the emergence of influenza and pneumonia is reduced due to the smoking cessation of the older adult. The alternative of reducing smoking has been demonstrated to be very effective through counseling. According to the GOLD Guidelines (2013) indicating that the client is recommended to get counseling every time he or she visits the healthcare facility. The counseling process may be short and informal or long-term and formal, but either of the two works. One of the possible recommendations to medical professionals is to employ the approach of five A's every time attending to a patient.

Airway Management

Noninvasive Positive Pressure Ventilation

Patients with acute hypoxic and/or hypercarbia respiratory failure caused by processes that can resolve within 48 hours can be trialed on noninvasive positive pressure ventilation (NPPV). Continuous positive airway pressure (CPAP) is used predominantly for acute hypoxic respiratory failure without hypercarbia. Bilevel positive pressure airway pressure (BiPAP) is used for hypercarbia respiratory failure with or without hypoxia. The additional inspiratory pressure of BiPAP causes augmented tidal volumes, thus increasing minute ventilation and thus blowing off carbon dioxide. Conditions that preclude use of NPPV include:

- cardiac or respiratory arrest
- unstable hemodynamics
- altered mental status without ability to protect airway
- inability to effectively manage airway or oral secretions
- large amounts of pulmonary secretions
- abnormal anatomy or airway
- traumatic facial or neck injuries with significant bleeding or risk of edema
- inability to remove mask if the patient were to vomit
- recent esophageal surgery

Indications for Intubation

- Depressed mental status and inability to protect the airway (lack of cough or gag reflexes)
- Severe pulmonary, facial, neck, or multisystem trauma
- Airway edema (burns, anaphylaxis, epiglottitis, infection, obstructing mass)
- Need for secretion management/airway clearance
- Tachypnea >35 breaths per minute
- Hypoxia refractory to maximized oxygen delivery
- Hypercarbia respiratory failure refractory to NPPV
- Minimize oxygen consumption and maximize oxygen delivery (sepsis/shock)
- Need for procedural sedation in setting of tenuous airway
- To obtain critical imaging
- Temperature control (serotonin syndrome)

Mallampati Score

The Mallampati score is used to identify patients who are at risk for difficult endotracheal intubation. The classification is a universal language to describe anatomic qualities of the airway

when a patient opens their mouth and sticks out their tongue. Scores range from 1 to 4; with a score of 4, the tongue fully obscures the soft palate.

Cormack-Lehane Airway Grading

This scoring system describes the view of the vocal cords under direct laryngoscope. Scores range from 1 to 4; with higher numbers, the poorer the view of the vocal cords, the more difficult the intubation. For grades 3 and 4, adjunct intubation equipment should be readily available.

Difficult Airway

Patients with known difficult airways should have notation of this easily identifiable in their chart and in their room/door way. A Glide Scope, fiberoptic bronchoscope, subglottic airway device, bougie or tube exchanger, cricothyrotomy kit, and tracheostomy kit should all be readily available for difficult airways. In nonemergent situations, early notification of the anesthesia team and surgical team is essential for successful planning of airway insertion.

Asthma

Asthma exacerbations may require an emergency department visit and possible admission when peak expiratory flow (PEF) is 40% to 69% of predicted. Hospital and/or ICU admission is likely when PEF is <40% of predicted. For moderate exacerbation interventions for PEF 40% to 69% or moderate symptoms:

1) Oxygen to keep oxygen saturation >90%.
2) Inhaled SABA via MDI or nebulizers hourly.
3) Start oral corticosteroids .5 to 1 mg/kg/d of prednisone or prednisone equivalents.

For severe exacerbations for PEF <40% or severe symptoms at rest, accessory muscle use, retractions:

1) Oxygen to keep oxygen saturation >90%.
2) Inhaled SABA via MDI or nebulizers Q 20 minutes; if remains refractory, may increase to continuous nebulizer at 10 to 20 mg/hr till subjectively feeling better.
3) Start IV or oral corticosteroids .5 to 1 mg/kg/d of prednisone or prednisone equivalents.
4) Ipratropium MDI or nebulizer Q 20 minutes or continuously.
5) For patients failing to improve with maximal therapy, consider inhaled Heliox mixture or intravenous magnesium as adjunctive therapies, although data to support is limited.
6) Intubate if the PaC02 normalizes or if the patient becomes hypercarbic or somnolent.

Pneumonia

AG-ACNPs will routinely diagnose and manage patients with pneumonia. Differentiating between viral and bacterial pneumonia and other similar diagnoses, such as COPD or heart failure exacerbations, requires repetition with conscious review of clinical findings. Furthermore, the AG-ACNP then needs to be able to differentiate between Community-Acquired Pneumonia (CAP), Hospital-Acquired Pneumonia (HAP), and Ventilator-Associated Pneumonia (VAP), as treatment regimens for CAP differ significantly from HAP and VAP.

Pleural Effusion

Pleural effusions are commonly noted on chest x-rays for a wide variety of patient conditions. Differentiating between transudative and exudative is an essential skill for AG-ACNPs. Using Light's criteria can assist clinicians in determining the etiology of the effusion. To calculate this, concurrent testing of serum and pleural fluid for protein, and lactic dehydrogenase is required. Use a phone app or online calculator to aid in this process.

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Chapter 9: Kidney Disease

Chronic Kidney Disease

Chronic Kidney Disease (CKD) affects approximately 13% of the population and is associated with significant morbidity, mortality, and cost. Serum creatinine is an unreliable marker of renal function, as normal values vary with gender, age, and muscle mass. Glomerular Filtration Rate (GFR) is the preferred marker to assess and monitor renal function. CKD is defined as a GFR >60 mL/min or kidney dysfunction including: CKCR0FT-GAULT FORMULA

GFR is not easily measured, thus the Cockcroft-Gault formula is used to estimate creatinine clearance (CrCl) and provide an approximate renal function in patients with stable CKD. This formula is not designed for use in acute kidney injury. It is found on many apps and online calculators.

An approximate of the GFR is known as Creatinine Clearance (CrCl); though, CrCl is a little higher than the actual GFR due to creatinine being secreted by the proximal tubule (other than being filtered by the glomerulus). The secretion of the extra proximal tubules misleadingly increases GFR estimate that is in proximal tubules..

Acute Kidney Injury

Acute Kidney Injury (AKI) occurs in 25% of critically ill patients due to sepsis, hypotension, and nephrotoxic agents. Nephrotoxic agents include antibiotics, diuretics, antihypertensives, and contrast dye used to enhance radiographic-imaging modalities. Patients of older age (>65 years) are at most risk for AKI.

The Acute Kidney Injury Network (AKIN) classification is a modified version of the RIFLE classification, and was designed to increase the sensitivity and specificity of the AKI diagnosis.

Contrast-Induced Nephropathy (CIN) typically occurs about 48 hours after receiving IV contrast. Repeated contrast exposure within a few hours to days of each other can increase the incidence of CIN. Prophylaxis with IV hydration with normal saline before, during, and shortly after contrast administration can reduce the incidence of CIN. Other interventions such as bicarbonate or N-acetylcysteine are not necessary.

- Renal Assessment Commonly Includes:
- Urinalysis
- Urine sodium and creatinine
- Serum sodium and creatinine
- Calculate the fractional excretion of sodium or, if a loop diuretic is given, can calculate fractional excretion of urea with the following formulas or use an app.

Continuous Renal Replacement Therapy (CRRT)

CRRT is preferred in patients who are hemodynamically unstable. CRRT can be either Continuous Arterial-to-Venous Hemodialysis (CAVHD) or Continuous Venous-to-Venous Hemodialysis (CVVHD). CVVHD is preferred over intermittent hemodialysis. Advantages of CRRT include a lower risk of hemodynamic instability and more control of fluid and metabolic status. Disadvantages are high cost, increased nursing care, restricted patient mobility, and a need for anticoagulation to the filter, circuit, or systemically to prevent the circuit from clotting.

Indications for CRRT:

- Refractory hypervolemia
- Hyperkalemia
- Acidosis
- Azotemia
- Severe hyper-/hyponatremia
- Uremia

End-Stage Renal Disease

General Considerations

End-stage renal disease (ESRD) is a condition that arises in a severe form of kidney disease. In ESRD, a kidney transplant or dialysis is required to enable a patient to survive. Patients under the palliative care model do not receive dialysis or transplant and instead pursue conservative care to cope with the symptoms and optimum quality of life that can be had during their short remaining life. According to the Medicare rules, a patient under hospice can still be provided with the dialysis services under the Medicare Part B in case he or she does not have ESRD as the terminal diagnosis. The ESRD in the majority of the patients is the vice that is connected with a terminal diagnosis of the patient and the hospice team would be involved in the process to negotiate the weaning of dialysis as the patient condition decreases.

Eligibility Considerations

The palliative interventions development should be based on the identification of certain structural/functional impairments, and the relevant limitations of activities associated with them. Comorbid or secondary conditions also tend to complicate the structural and functional deficits of a primary diagnosis of ESRD. To qualify in hospice, a patient is as follows:

The patient neither requires dialysis or renal transplant nor stops dialysis.

Creatinine dissipation is less than 10cc/min.

Serum creatinine exceeds 8.0mg/dl (6.0mg/dl among diabetics).

Symptoms/ signs of renal failure:

Uremia

Oliguria (< 400 cc/24 hours)

Ineffective hyperkalemia(> 7.0) which is not treated.

Uremic pericarditis

Hepatorenal syndrome

Irrational intractable fluid overload, which cannot be treated.

In dealing with renal disease refer to your MAC or other regulatory bodies regarding current and specific advice.

Patients and families may find it hard to hear the diagnosis of ESRD as it proves to mean that they will die without the use in some form of KRT (hemodialysis, PD and transplantation). ESRD refers to extreme damage and failure of kidneys in the patient. People that have CKD may maintain their progression to the stage where they may need KRT or they may opt to undergo supportive treatment that does not require any dialysis (when a person dies, it will occur in a comparatively short period of time). The condition may be familiarized as CKD defined as damage to the kidney or an estimated Glomerular Filtration rate (eGFR) which is below 60 mL/min/1.73 m2 for 3 months or more. Kidney damage (regardless of pathology) can be manifested through changes in the blood in urine or imaging research. It has been demonstrated that although a person who is over 65 years old has his or her eGFR under 60 mL/min /1.73 m 2, without albuminuria or other signs of kidney damage, he or she may not have CKD. Glassrock, Delanaye, and El Nahas (2015) propose that a lower eGFR below 45 mL/min/1.73m2 in individuals over 65 years of age can be considered a more accurate understanding of CKD. Classification of CKD ought to be done according to the intensity of kidney functioning. This system of classification is grounded on eGFR and albums albuminuria categories. G1 classification consists of ones that have normal kidney work but kidney damages indicators. G2 is regarded as a slight reduction of kidney functioning (e.g., people with diabetic albuminuria in their urine). G3 has been further subdivided into 3A (eGFR between 45 and 59 mL/min/1.73 m 2) and 3B (eGFR between 30 and 44 mL/min/ 1.73 m 2).reflection on the augmented problems related to progressed CKD.

Nursing care of patients with ESRD is complicated, and the patients often have various comorbidities that might lead to severe complications. The Cardiovascular Disease (CVD) is a high risk to this population. Actually, CVD is the number one death cause in the ESRD person and is identified as an independent risk factor of cardiovascular disease. CVD is divided into various conditions, some of which include stable Atherosclerotic Heart Disease, Acute Myocardial Infarction (AMI), Congestive Heart Failure (CHF), stroke, peripheral vascular disease, atrial

fibrillation and sudden cardiac arrest, which predisposes the risk of premature death. The presence of other comorbid diseases that can affect the health and well-being of patients with ESRD is DM, hypertension, osteoarthritis, and cognitive impairment. Taking into account the disease burden linked to multiple comorbidities, the threat of functional impairment (particularly among older adults with the ESRD), and the requirement to receive a life-sustaining intervention, there are numerous difficulties with care management in the patient and family circles. Hence, the primary purpose of the nurse is to work in cooperation with the nephrology team regarding the search of the measures intended to enhance the health outcomes. The presence of nurses is also necessary to have a conversation about the End-of-Life (EOL) issues in case the individual decides that he/she wants to pull off dialysis.

With a long list of medical and psychological problems that are usually considered when a patient has ESRD, medical personnel tend to emphasize the medical conditions by developing the plan to correct the abnormal laboratory values by trying to treat the comorbid conditions. Much as these are necessary in health promotions, it is imperative to factor in the individual affected by ESRD and his or her QOL. Patients with ESRD cannot be assured that their goals can be merely to maintain life; it should also enhance QOL. Moreover, it is essential that person-centered approach to care is at the center of the decision making as far as the way the ESRD will be dealt with is concerned. By adopting this strategy, a holistic interprofessional team that is dedicated to a joint decision-making practice has to exist, the significance of which is addressed further in the chapter. This is the approach that must dominate during the course of ESRD up to the EOL care.

Palliative Care (PC) will be addressed in this chapter about three categories of patients with ESRD: (1) those on dialysis, (2) those opting to have conservative management, and. (3) withdrawing from dialysis. In reading this chapter, the following questions should be considered: (a) What is the role of PC in improving health outcomes for individuals with ESRD? and (b) What are the best care practices for those who withdraw from dialysis?

Incidence and Prevalence

CKD is now considered a global health problem that is increasing worldwide. In the United States, too, the incidence and prevalence continue to increase. In 2014, there were almost 121,000 new cases and the prevalence was at 678,383. Despite the fact that since 2010 the number of new cases of ESRD has plateaued, there continues to be a rise in prevalent cases of approximately 21,000 each year. The greatest incidence rate is of the persons 75 years and above, whereas the prevalence is the largest of the persons 65 to 74 years old. Partially this is associated with the fact that there is a high risk of mortality among adults aged 75 and above. As predicted, the rates of ESRD are increasing with the general rate of increase in the rate of kidney disease but with a lower overall rate as compared to the previous years. The area of the problem is also broad considering that the population of older adults suffering diabetes is expected to rise, and it is the leading cause of CKD in the United States of America. These patients will develop ESRD in a significant proportion..

The increase in ESRD is also of concern for economic reasons, as it is the only disease entity in the United States that is reimbursed primarily with public funds. Medicare pays for 80% of all costs of care for patients diagnosed with ESRD, if they have contributed to the Medicare fund or if a child has a parent who has contributed. A year of hemodialysis can be about $72,000 and PD costs approximately $53,000 per year. Those who are not eligible for Medicare may meet the criteria for Medicaid; however, the reimbursement is substantially less than that in Medicare. Undocumented immigrants pose other challenges, such as suboptimal care and adding to the current financial burden within the U.S. healthcare system. Many of these people will visit the emergency department to receive care. Ethnic minorities (i.e., Hispanics, African Americans, Asian Americans) have a high risk of ESRD. In 2014, the incidence of ESRD was about 35% higher compared to that in the non-Hispanic population. The prevalence continues to rise among all ethnic groups except Native Americans, in whom there has been a decline. The prevalence remains high among blacks compared to any other racial group at nearly 2.6-fold higher than that in Native Americans and Asians, and 3.7-fold higher than that in whites.

There is a trend where adults are choosing home dialysis over in-center treatments with an overall 73% increase in use since 2007. In 2014 as compared to 2007, home hemodialysis increased by 72% and PD by 12%. Even though there has been a substantial increase in home modalities, they only represent about 3.4% of the dialysis population, with the majority choosing in-center hemodialysis.

Pathophysiology

The disease process can lead to any disease that causes ESRD; although certain diseases are more likely than others to cause the irreversible damage and kidney failure. We understand that the primary cause of CKD developing to ESRD is the attack of glomeruli of the kidney by glomerular diseases. Kidney as the origin of primary glomerular diseases and systemic as the origin of secondary glomerular diseases (i. e. lupus nephritis, DM). In cases where the glomeruli is damaged, it is possible to notice protein and Red Blood Cells (RBCs) in the urine. Actually, microalbuminuria, proteinuria and /or RBCs in the urine is the initial indicator of kidney damage even before the changes are observed in the blood laboratory studies. Immunological pathogenic mechanisms result in the most prevalent form of glomerulonephritis (collection of glomerular diseases). Diseases, including DM, amyloidosis in older adults, and IgA nephropathy in adults too are some causes of chronic glomerulonephritis. Instead, glomerulosclerosis (scarring and hardening of blood vessels of glomeruli do not represent a disease in itself but are often caused by infection, drug poisoning, systemic diseases, including diabetes, HIV, or lupus nephritis.

The Tubulointerstitial kidney disease refers to one which is outside the glomeruli, and this may be acute or chronic. With the prolonged exposure to the environmental conditions or medicines (i.e., lithium, NSAIDs, diuretics) or therapeutic agents and systemic disease, they can cause chronic tubulointerstitial nephritis. Renal artery stenosis and hypotensive nephrosclerosis are other causes

of CKD. Polycystic Kidney Disease (PKD) is a medical condition that is the most widespread inheritance potentially causing CKD. PKD is found to be approximately 2.0% of ESRD population. Kidney damage can also be as a result of recurrent UTI.

In spite of the numerous risk factors causing CKD race/ethnicity, age, and renal cell carcinoma, DM acts as the major causative agent behind ESRD with hypertension coming in as the second cause. The rate of highest diagnosis of diabetic kidney disease, and/or hypertension.

ESRD follows among adults over 75 years of age then those between 65 and 74 years.. In the case of both diabetes and hypertension, if they had been treated aggressively in the early-onset phase of the disease, most patients would not eventually be diagnosed with ESRD. Given that diabetes accounts for almost 50% of the cases of ESRD, the really alarming statistic is that the incidence of diabetes is increasing exponentially worldwide. Recent statistics set the rate of diabetes in the United States at 25.8 million, or slightly over 8.3% of the population.

ESRD has underlining renal pathology depending on the etiology. As an example, in diabetic kidney disease, renal lesion comprises of afferent artery and efferent artery alteration, tubular fibrosis, serialization of the basement membrane and compression against the glomerulonephritis filtration surfaces. The progression of these changes occurs due to the continual presence of hyperglycemia and subsequent proteinuria which adds to hyperfiltration and elevated GFR and eventual development of GFR deterioration. Both disorders resulting in ESRD will have varied histopathology, but they will all share one commonality, namely, that somewhere along the way, the nephron was destroyed in one way or another, and when this is not checked, they will all impact cellular destruction leading to CKD which will become ESRD.

In the pediatric population, the most common diagnoses that lead to ESRD differ from those of adults. They include, in the order of frequency, Glomerular-Nephritis (GN), vasculitis, and familial, including cystic, disease, with GN having the best prognosis. The mortality rate for children regardless of cause is 55.3/1,000 patient-years, which is better than that for adults (226/1,000 patient-years). The most recent statistics demonstrate an encouraging trend of progress in the 5-year survival rate for children. As with adults, the most common cause of death for children with

In the earlier stages of CKD (Stages 1–3), there may be few, if any, noticeable symptoms of disease. Even in the later stages (Stages 4–5), people may not endorse symptoms that can occur as the kidney function declines. Patients adjust to the gradual onset of symptoms that occur as CKD progresses to ESRD. In fact, progression to ESRD is often so insidious that patients do not realize that they have kidney disease until it is quite advanced. It is commonly revealed for the first time when patients have laboratory work done for other purposes. Even after diagnosis of CKD, the movement to ESRD can be so gradual that patients may be unaware of how badly they feel until they are dialyzed for several weeks and symptoms of uremia subside. Symptoms increase in severity as renal function (GFR) decreases. Many patients do not develop life-limiting symptoms of CKD until their GFR is below 10 mL/min or at the point at which they have lost 90% of their

kidney function. Patients who have CKD Stage 5 with uremic symptoms, or who are underdialyzed or who opted to stop dialysis, will develop the manifestations of uremia, found in the second list that follows. Signs and symptoms include the following:

- Early Signs and Symptoms:
  - Hyperparathyroidism
  - Anemia
  - Hypertension
  - Cramps of the legs, pains in the joints, gout, arthritis, muscle pains, muscle weakness, etc.
  - Pitting edema
  - Monotrophic gains with weight fluid retention.
  - Weakness and fatigue
- Did the patient develop late signs and symptoms (Uremic Indicators)?
  - Dry scaly skin and pruritus
  - Frequent headaches
  - Heat or cold intolerance
  - Breathing ammonia smelling or urine excreting.
  - Tasting is different in the mouth with metals.
  - Failure of cuts, abrasions to heal.
  - Chest pain or palpitations
  - Dyspnea, Orthopnea, Paroxysmal nocturnal dyspnea.
  - Pericardial friction rub
  - Able to scratch easily, purpura, bleeding.
  - Anorexia
  - Weight loss or gain
  - Nausea and vomiting
  - Fainting or seizures
  - Peripheral neuropathy
  - Loss of concentration and memory.

Principles of Palliative Care

Modern PC has benefited from the efforts of professional groups that have promoted the establishment of CPGs that are both general and specific to particular patient populations like ESRD. General PC guidelines include American Association of Colleges of Nursing Guidelines for End-of-Life Care, Hospice and Palliative Care Nursing Competencies, National Quality Forum Guidelines and Preferred Practice for Quality Palliative Care, and Liverpool Care Pathway for the Dying Patient. Guidelines specific to care of ESRD patients include those from the American

Society of Nephrology entitled Shared Decision Making in the Appropriate Initiation and Withdrawal from Dialysis. This guideline was designed to help nephrology professionals decide who will truly benefit from dialysis. A second guideline is the "End-Stage Renal Disease Workgroup—Recommendations to the Field," which was developed in affiliation with the RWJ Foundation's national program of Promoting Excellence in End-of-Life Care. In addition, the Coalition for Supportive Care of Kidney Patients (www.kidneysupportivecare.org) offers nurses evidence-based information and recommendations to improve QOL and alleviate suffering in people with advanced CKD/ESRD.

The RWJ workgroup in particular has been instrumental in moving forward the effort to improve PC services for those with ESRD. This group identified the gaps, the lack of consensus, and the absence of available research specific to ESRD PC and made recommendations to address these needs to all involved parties. Based on these recommendations, a demonstration project, the Renal Palliative Care Initiative (RPCI), was developed by eight dialysis clinics and the Baystate Medical Center in Springfield, Massachusetts, with the cooperation of a large nephrology practice. Physicians, nurses, and social workers established a group that became educated in techniques of PC, developed programs to implement PC, and introduced them to the routines of dialysis patient care in the hospital and dialysis units. They also established survey instruments to ask family and patients about the quality of dying and programs to support bereaved families.

The RPCI developed initiatives to holistically address the needs of patients, families, and the care team as they grappled with the challenges of renal disease, dialysis, and transplantation. They incorporated strategies to help with confronting the inevitability of eventual early death in the ESRD population even while continuing with KRT. The group found that the initiatives' measures enabled providers to become more likely to address palliative needs of people with ESRD and they became more proficient in doing so. Gaps still exist, but the RWJ ESRD workgroup provided a well-thought-out plan to improve the QOL and dying for people with ESRD. Over the last decade, nephrology professionals have worked very hard to move research and clinical practice initiatives focused on PC in people with CKD forward. In fact, a recent KDIGO executive summary for supportive care in CKD was published to provide recommendations for assessment and management of symptoms and strategies to improve QOL. The summary recommends assessment and stepwise management of symptoms with nonpharmacological strategies as the first line, followed by pharmacological interventions. As nephrology experts witness the substantial growth of an aging CKD population, there is an expected increased focus on the valuable role PC has in improving health outcomes among individuals with advanced CKD.

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Chapter 10: End-Stage Liver Disease

The liver is the largest solid organ and weighs 1,200 to 1,500 g. It lies in the right upper quadrant protected by the ribs and is supplied by the common hepatic artery. The liver is unique in that 60% to 85% of oxygen and nutrients come to it through the portal vein, which drains the small and large intestine, the spleen, the stomach, and the pancreas. The portal vein, hepatic artery, and bile duct course together in a thin fibrous bundle, and the artery and vein branch into smaller and smaller diameter vessels while the small bile ductules coalesce into larger ducts and carry bile in the opposite direction. The blood in the smallest arterioles and venules percolate along cords of liver cells in the sinusoids (leaky capillary-like structures) and drain into the central veins. These join other central veins and finally form the hepatic vein, which carries blood to the inferior vena cava and then to the heart.

The liver performs a myriad of functions:

- Protein synthesis and secretion: almost all plasma proteins (except for gamma globulin), including alpha and beta globulins, albumin, and binding proteins for metals, toxins, hormones, and lipoproteins
- Excretion: bilirubin, bile salts, heavy metals, lipids, toxins
- Storage: iron, vitamin A, glycogen, lipid
- Immune: Kupffer cells, which traverse the sinusoids, engulfing bacteria, bacterial products, dead hepatocytes, and senescent red cells
- Nutrition: governs the fate of amino acids to be used as an energy source, to synthesize new proteins, or to be degraded to urea; stores and metabolizes glucose; synthesizes lipids and conjugates them to proteins for secretion and delivery to all cells in the body.
- Metabolism: due to its blood supply, which carries blood from the gut, lipid-soluble toxins, both exogenous and endogenous, contact hepatocytes first and are extracted efficiently from the bloodstream. Lipid-soluble medications are transformed by the cytochrome P-450 system and are either excreted in the bile or metabolized to inactive molecules.

There are many chronic liver diseases that lead to cirrhosis, such as viral hepatitis, autoimmune hepatitis, Primary Biliary Cholangitis (PBC), Primary Sclerosing Cholangitis (PSC), nonalcoholic steatohepatitis, alcohol, some toxins, and inborn errors of metabolism. Whatever the etiology, cirrhosis is the final common pathway, and a new set of concerns and problems develops.

Palliative Care

Given that the disease progression from ESLD is slow and involves intermittent acute exacerbations, predicting survival is difficult. Death from ESLD is relatively sudden and unpredictable until the last week of life. These uncertainties and challenges in prognostication are among several barriers for early referral of individuals with ESLD to palliative care or hospice. Individuals with ESLD often receive palliative care late in the disease trajectory. Palliative care in other conditions has been associated with better end-of-life care by improving symptom control and quality of life, as well as extending life and lowering healthcare resource utilization. Individuals with ESLD tend to live in a state of poor and declining health, but often have a limited understanding of their disease severity and prognosis and, therefore, may not realize how close they are to death. As such, the introduction of end-of-life care conversations and referral to palliative care is often challenging for healthcare professionals. At the same time, healthcare professionals may lack training and experience in initiating end-of-life conversations, and may overestimate life expectancy, focusing on medical interventions.

Professionals may be concerned that palliative care referrals are alarming to patients and families. They may also be concerned about taking away patients' hope for a potential liver transplant and therefore postpone difficult end-of-life conversations. Patients and families may perceive that palliative care is similar to hospice and that professionals are "giving up" on them, rather than understanding that palliative care and hospice improve the quality of life until its end. In a study following patients with ESLD admitted to the intensive care unit for the treatment of liver complications, Hansen et al. found that the possibility of receiving a liver transplantation was the driving force for patients, family members, and healthcare professionals to continue life-sustaining treatments. Although due to disease severity patients may become ineligible for a liver transplant, professionals often find the introduction of palliative care and hospice to be a difficult conversation. The result is that palliative care or hospice may begin within days of death, leaving little time to address end-of-life needs and concerns.

It is important to realize that palliative care can be introduced at any time in the illness trajectory to improve the quality of life of patients and families, with discussions of the goals of care, and the management of physical, emotional, and spiritual needs. Baumann et al. examined an early palliative care intervention for patients with ESLD during the patients' standard 1-week pre-transplant evaluation process. The intervention included symptom assessment and control as well as discussions of psychosocial well-being and spiritual health. Twenty-nine of the 50patients who had the intervention completed a follow-up assessment within 6 months. The results indicated that the intervention improved symptoms of pruritus, appetite, anxiety, fatigue, and depression. This work supports the notion that palliative care interventions are beneficial to patients with ESLD, even those who are referred for a liver transplant evaluation and awaiting a transplant.

Liver Disease Care

General Considerations

Patients with end-stage liver disease require progressive medical support and manifest a range of complications and symptoms that have significant impact on both survival and quality of life. This may include cirrhosis and other liver diseases.

Eligibility Considerations

Patients are considered to be in the terminal stage of liver disease if they meet the following criteria:

- Prothrombin time increased to longer than five seconds with control or International normalized ratio (INR) with values above 1.5.
    - Serum albumin < 2.5 gm/d1
    - There is end-stage liver disease, and the patient demonstrates at least one of the following:
    - Intractable, or noncompliant with patient.
    - Spontaneous bacterial peritonitis in men akin to what causes bacteremia is commonly called spit back.
  - Hepatorenal syndrome
  - Liver jaundice, hepatic encephalopathy, untreatable.
  - Variceal bleeding, which, nonetheless, recurs despite the intensive treatment.
  - Recording of the following eligibility supporting to the hospice care:
  - Progressive malnutrition
  - Reduction in the strength and endurance of muscles.
  - Throughout life continued active alcoholism (> 80 gm ethanol/day)
  - Hepatocellular carcinoma
  - HBsAg (Hepatitis B) positive.
  - Hepatitis C non respondent to interferon therapy.

Liver transplant patients expectant of the liver transplant and waiting requirement by other criteria may be eligible to receive Medicare Hospice Benefit, however, obtaining a donor organ will impel the patient to leave hospice. In dealing with liver disease consult your MAC or other regulating agencies, to get the latest and specific advice.

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Chapter 11: Ethical and Legal Issues

Lay and expert groups throughout the world are suffering with bioethical and prison dilemmas added approximately by the proliferation of scientific technology. A heightened experience of self-willpower and the selection making related to the use of available lifestyles-maintaining generation, termination of life-prolonging treatment, affected person-requested euthanasia, and assisted suicide have engendered bioethical and legal dilemmas in give up-of-existence care. despite the fact that those dilemmas have exceptional ramifications for extraordinary human beings, a patient's nicely-being can pleasant be served while healthcare experts are able to collaborate with each different, the affected person, and the circle of relatives to set desires for affected person care because the EOL techniques. For nurses in particular, EOL decision making is a ethical difficulty as well as a criminal one. the moral query of what is "proper" or "satisfactory" for the affected person, what must be executed, and who's the individual pleasant applicable to do the "proper" or "pleasant" issue evokes robust private sentiments while discussing EOL care. these questions have the capacity to provoke battle amongst the ones concerned in affected person care—physicians, nurses, social workers, and others—and the questions for every are clouded via the person's non-public and professional ethics.

EOL questions pose a distinct predicament for the circle of relatives. normally, households are faced with discussions concerning whether or not to forestall remedy and permit the patient to die a natural death. own family individuals or patients won't remember that there are limits to how lengthy and the way nicely medical technology can preserve lifestyles. as an instance, the general public do now not recognize how not likely someone is to live to tell the tale Cardiopulmonary Resuscitation (CPR). greater crucial, circle of relative's participants won't be sure of what the patient might have wanted if she or he were capable of make the selection.

expertise of the patient's desires is critical; prison and moral scholars agree that choices approximately care at the EOL ought to be made in accordance with a man or woman's wishes, options, beliefs, and values. no one have to be challenge to medical care towards his or her desires. For the beyond two decades inside the America, autonomy and self-willpower were the inspiration for such choices.

Nursing college, nursing students, and working towards nurse's cope with moral and criminal troubles, which includes EOL care, with patients and circle of relative's members in clinical exercise daily. With expanded clinical generation and competing pursuits of loss of life patients, their households, and full-size others, pleasant they want of many to die with dignity is a subject for healthcare experts. Nurses are in a key position to deal with the escalation of bioethical dilemmas that bring about wrenching conditions for patients, households, providers, and the courts. because the landmark instances of Karen Ann Quinlan and Nancy Beth Cruzan, nurses, physicians, and different healthcare specialists have formed public policy concerning patient and

surrogate participation in EOL selection making even when the affected person is incapacitated and not able to make choices.

Regulation and Ethics: Equal or Exclusive?

law and ethics are comparable in that they've developed inside the identical historical, social, cultural, and philosophical soil. Black's law Dictionary defines "law as" "that which is laid down, ordained, or established; a frame of guidelines of action or conduct prescribed by means of controlling authority and having binding prison forces; and that which must be obeyed and observed through residents' issue to sanctions or criminal consequences". The law can be described better because the sum overall of rules and policies with the aid of which a society is governed. "Ethics," in contrast, refers to informal or formal standards that manual how individuals or businesses of people agree with they have to behave.

law and ethics may also fluctuate in what they allow or require a person to do. for instance, a few movements can be prison yet no longer moral. A historical instance is the legality of slavery inside the America until the Civil warfare. extra latest, a nurse in Oregon would possibly legally have assisted an affected person to devote suicide, although the yank Nurses association declared that such assistance became unethical. other movements may be moral however now not criminal. An ancient instance will be the improvement of the Underground Railroad to help slaves fleeing to Canada. This dichotomy can occur because legal rights are grounded within the regulation and ethical rights are grounded in moral principles and values. The regulation establishes regulations that define a person's rights, obligations, and the perfect penalty for people who violate it. moreover, the law describes how the government will put into effect the regulations and penalties. there are many laws that affect the practice of nursing, and nurses have to be able to distinguish between ethical claims that propose how a nurse ought to act and prison requirements for the nurse to act in particular ways or potentially incur sanctions.

Nursing and the Law

criminal and moral obligations aren't new to nurses. each kingdom's nurse exercise act, a felony statute regulating nursing, and the expert code of ethics observed by way of nurses are the principles of nursing exercise. further, nurses are confronted with complex ethical and felony questions about an ordinary foundation when worrying for demise sufferers: when does death occur? Does a man or woman have a right to choose dying? Is there a distinction among letting someone die and taking measures to hasten loss of life? Do you disclose a terminal prognosis to a affected person? these are only a few of the moral and legal issues in current nursing.

choice making at the EOL has been at the coronary heart of many moral catch 22 situation discussions and criminal cases in bioethics in the past 25 years. due to the fact nurses are legally responsible and responsible for the healthcare that patients and their households obtain, nurses cannot come up with the money for to view the questions of ethics and regulation as entirely an academic exercising, nor ought to moral and felony issues of these days's healthcare issues remain

completely within the purview of the agency's ethics committee or hazard management departments. Nurses need to apprehend the simple ideas of ethical choice making and understand the relevant laws that deal with the current controversies to ensure that individual and societal rights and values are covered.

Informed Consent

informed consent is the technique wherein patients agree to simply accept scientific interventions after good enough disclosure of the nature of the interventions. treatment options are explained in layman's terms to the affected person and/or their designee. The dangers and advantages of and alternatives to the proposed interventions are defined to the patient so the affected person can determine upon an intervention or treatment plan. To make informed choices, the affected person must have ability to take part in this method. If a affected person does now not have capability, the surrogate decision-maker should be engaged inside the method. elements of informed consent: informed consent is a sufferers' proper. informed consent requires that the affected person have the capacity to take part without potential, patients want a surrogate choice-maker. Care can be provided under emergency presumption.

informed consent isn't only a criminal requirement, but additionally a moral vital. The criminal requirement of knowledgeable consent is based on the value of affected person autonomy and self-willpower. every individual of grownup years and sound mind have a proper to decide what will be done with his or her very own body. according, the essential desires of informed consent are patient autonomy and self-dedication. This goal is effectuated by using permitting sufferers to make their very own selections approximately their healthcare based totally on their very own values for so long as they are capable.

The 2nd reason of informed consent is to give the empowerment to patients to make their pertinent choices in a rationale and rational manner, there is no assurance that by giving patients the applicable statistics about the treatment they will make intelligent choices, nor does it imply they can make intelligent choices, but absent a requirement, the chances of making wise choices are reduced. The right of the concerned individual to consent assumes that the patient is endowed with adequate information in order to make an affordable choice..

Consent to remedy is legitimate only while the affected person has the potential to consent. Competence isn't always similar to ability, yet they're frequently considered to be synonymous. A competent individual is able to realize the character of a capability motion and understand its significance. The regulation presumes that each one adult is able and have the capability to make their personal decisions, together with the ones approximately healthcare, and that assumption is by and large accurate. consequently, incompetence is determined handiest in a court of law. however, a patient needs no longer be adjudicated incompetent to lack the capability to consent to medical treatment.

capacity is decided no longer by way of the courts, but instead via clinicians who determine functional competencies to determine whether the capability to make a specific choice is missing. disability isn't determined totally by way of a clinical or psychiatric prognosis. rather, decisional capability inside healthcare is decided thru scientific evaluation and the capability of the patient to give valid consent.

The simple elements of a valid consent—the determination that a affected person has sufficient decisional potential to consent or refuse remedy—are primarily based on the commentary of a particular set of abilities. so that you can have selection-making capacity, the patient should be able to understand the relevant data, admire the state of affairs and its outcomes, reason about remedy alternatives, and speak a choice. Appelbaum notes that the usage of standardized questions can increase the reliability of raters determining a affected person's capacity. He recommends the McArthur Competence evaluation device, which takes about 20 mins to manage and score. however, he additionally suggests questions that are generally blanketed while assessing every criterion to decide whether or not a patient has the capacity to make a healthcare choice. Examples of the questions encompass the subsequent:

• might you please inform me to your very own phrases what your health practitioner advised you approximately your modern-day problem and its treatment?

• what is the treatment probable to do for you?

• What makes this treatment an awesome desire for you? Why is it better than any other one?

• Please inform me what you've got decided to do.

not all health choices require the equal degree of selection-making capacity with a view to make a valid decision. selection-making ability is not an "on–off transfer", that means a patient both has it or does now not have it. alternatively, potential is usually considered as challenge precise; an person may be able to perform some duties thoroughly and can have the capacity to make a few selections, however can also nevertheless be unable to perform all duties or make all selections. The notion of "choice-unique potential" assumes that an man or woman has or lacks capability for a specific selection at a specific time and under a selected set of occasions.

Cases Requiring Ethics Recommendation

The Joint commission calls for hospitals to have a manner to address ethical situations. Ethics committees are generally interprofessional in nature, inclusive of health practitioner, nursing, social work, legal counsel, clergy, ethicist, and/or others decided by the sanatorium. session with the health center ethics crew can arise for ANY cause. normal reasons for session include the following issues or worries: boost directive or surrogate selection-making "Do no longer Resuscitate" orders mind-death standards/pronouncement potential/informed consent isolated and/or incapacitated affected person futility or demand for useless treatments discharge or placement issues maternal/fetal worries medical errors pain-control problems refusal of

encouraged treatments/interventions/research ethics/useful resource allocation/transplantation subjects /withdrawal of life-sustaining healing procedures, such as ventilators and nutritional help cultural/ethnic/religious breach of confidentiality communication troubles great-of-lifestyles worries dispute/battle.

Clinical Errors

Disclosure of medical errors is anticipated while harm is precipitated to an affected person. This need to be achieved as quickly as information are known and upon session with the risk-management branch. Open disclosure, by declaring data which might be currently known, and the fame of ongoing investigations should occur as quickly as possible. Do now not percentage suppositions of ways something might also have passed off or factor arms as to who or what may have passed off. definitely carry the statistics in an empathetic, nondefensively manner. Disclosure and apology for the mistake can lessen malpractice litigation; conversely, failure to reveal can growth litigation. kingdom legal guidelines are evolving to help apology for medical errors. patients and families need to realize how the organization is responding in an effort to save you others from incurring similar harms.

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