Cancer in the Elderly

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Abstract: The transition to old age involves a series of events, including those that are objectively defined and others that individuals evaluate subjectively. The aim of this review study is the investigation, highlighting and information about the multiple effects of cancer on the elderly. An extensive review of the relevant literature was performed via electronic databases (Medline, PubMed, CINAHL and Google scholar) and Greek and international journals. The exclusion criterion for the articles was the language other than Greek and English. The risk of cancer increases with age, resulting in an increased number of older people seeking treatment. Caring for elderly people with cancer differs from that of adults because of the biological differences in tumor, coexistence of morbidity, as well as various psychosocial issues that can affect the effectiveness of treatment. Despite the reduction in the mortality rate of cancer, the aging of the population is accompanied by a significant increase in the overall number of cancer patients. The main nursing care goal is the limitation of biological and atomic forces and characteristics' loss and the adjustment of the elderly to the different phases of the disease. Finally, in the later stages of the disease, the nurse often provides just palliative care.

Key words: Third age, cancer, disease and health, and a combination of these.

1. Introduction

The transition to aging is a process that begins early in life and differs from the factors determining aging. It continues to be differentiated until the end. It is an ongoing process in which various factors are added continuously. The interaction of those factors will determine the onset of old age. [1]

The transition to old age involves a series of events, including those that are objectively defined and others that individuals evaluate subjectively. Various characteristics of the same person are not getting older at the same rate. Therefore, those characteristics will become slowly visible at some point, but each of them will follow different rate of growth in the same individual. The hair of an individual can quickly be whiten, but his physical strength can maintain for a long time. [2, 3]

The main causes of death also have changed dramatically in recent years. Heart attacks and strokes

together with cancer are the main causes of death in human society, affecting it in an explosive pace that takes the form of a pandemic. The main predisposing factor is considered the human's modern way of life. [4]

Cancer is a constantly evolving disease that afflicts the scientific community of the 21st century. Despite the fact that Europe's population is only 1/9 of the total world population, for 2008, 1/4 of global cases of malignancies were located only in the European region.[5]

However, despite the increased incidence and mortality in this age group due to malignancies, elderly cancer patients are less likely to receive chemotherapy compared to younger patients. It is also noted that the elderly are systematically excluded from clinical experimental studies. This fact complicates the decisions of health professionals regarding the treatment regimen that has to be followed. [6]

The purpose of this review study is the investigation, highlighting and information about the multiple effects of cancer on the elderly.

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2. Material and Methods

An extensive review of the relevant literature was performed via electronic databases (Medline, PubMed, CINAHL and Google scholar) and Greek and international journals using the following key words: third age, cancer, disease and health, and a combination of these. The exclusion criterion for the articles was the language other than Greek and English.

3. Old Age

The old age is connected with the end of life and it is of particular importance, as it concerns all people. It has been established like a phase in human life with its own special characteristics associated not only with the physical, physiological weakening or even the existence of acute or chronic diseases, but also with changes in social life. [7]

By 2030 it is estimated that 25% of Greece's population will be aged over 65, or about 3,000,000 people, and the elderly over 85 years are already the fastest growing subgroup, so-called "old". It is also recognized that increasing longevity is accompanied by painful diseases. [8, 9]

Aging is a progressive, healthy and irreversible process and it is not definitely a disease. The study of aging is not only one theoretical approach that could be applied worldwide. The biological view of aging has greatly influenced the relevant research. [10]

With age there is a gradual deterioration of physiological functions, characterized by the decline of the adjustment mechanisms. These results in changing the clinical picture with which the various diseases are presented. Autonomy and quality of life are threatened by the complicated and complex pathology of the elderly, characterized by a significant increase in the prevalence of chronic diseases, high co-morbidity, and increased use of health services and medicines consumption. [11]

Any disease, such as an infection, affects the already weak body of the elderly and leads them to reduced mobility or immobilization with the consequent loss of

their independence. Numerous studies have also shown that when the elderly lose weight, they double the risk of death. Weight loss increases the likelihood of falling, hip fracture, and entering the elderly into chronic care structures due to loss of muscle and bone mass. The main causes of weight loss in the elderly are six: anorexia, cachexia, malabsorption, increased metabolism, dehydration, sarcopenia and malignancies. [12]

Aging is also signaled by a sequence of molecular changes at the level of cell cultures, others of which act favorably or inhibit the formation of a neoplastic phenotype. All these molecular changes in cell aging make it more vulnerable to the action of environmental carcinogens, and explain in part the relative age and carcinogenicity. [13]

4. Cancer

The increased incidence of cancer nowadays, and especially to the age group over 65, makes this illness topical. Neoplastic diseases were named as "cancer" by Hippocrates because their form was likened to the crab [14]. Cancer is generally one of the most serious diseases of the modern age. Statistics show that its frequency has increased and it is the second most common cause of death after heart disease. It usually affects older people, although there are many cases of teenagers and young children affected by the disease [15, 16]. The term cancer has generally multiple use for about 100 different diseases including malignant tumors (cell mass) of different regions such as colon, leukemia as well as bone and soft tissue sarcoma. [17]

The term "cancer", therefore, refers to a large group of diseases characterized by uncontrolled cell proliferation. The consequences of the above abnormal behavior of these cells are the development of a mass called "tumor". Poor blood flow to a region, the existence and accumulation of toxins in the body, and stress, contribute to cell division earlier, resulting in tumors. The generation and growth of cancer, carcinogenicity, are due to a combination of many

factors making it a multifactorial event. [18]

In developed countries, several common types of cancers are associated with reasonably high survival (prostate, breast, rectal and colon cancer), while cancers with poor prognosis (liver, stomach and esophageal cancer) are more common in less developed areas [19]. Some of the main features of cancer cells are their metastatic ability and behavior, their resistance to aging mechanisms, and the body's ability to stop cancer proliferation. [15]

Metastasis is the extension of cancer from the primary tumor to other distant organs and regions. Metastasis is a hallmark of malignant diseases, and it is of great importance for the diagnosis, staging and development of a therapeutic strategy. The process of metastasis begins very early after malignancy is being developed and it is increased and multiplied along with the course of the primary outbreak. [20]

5. Cancer and the Elderly

Cancer can attack any tissue, organ and system of the human body. It is a major health problem, especially in developed countries. In the elderly, in particular, cancer in its early stages is developed more silently and more sneakily.

The risk of cancer increases with age, resulting in an increased number of older people seeking treatment. Caring for elderly people with cancer differs from that of adults because of the biological differences in tumor, coexistence of morbidity, as well as various psychosocial issues that can affect the effectiveness of treatment. Despite the reduction in the mortality rate of cancer, the aging of the population is accompanied by a significant increase in the overall number of cancer patients. [5]

Cancer accounts for 21% of deaths among older people. This malignant disease increases with age, but there is no clear evidence that cancer itself is associated with the aging process. However, the relationship between cancer and immune system is now the subject of research. Some types of cancer that appear to be

age-related are actually the result of long-term exposure to chemicals known as carcinogens, such as asbestos and tobacco. [21]

Treatment for cancer has not been found, but a person who has been diagnosed with a slowly growing or controlled type of cancer can live for many years. The problem is that the cost of medical treatment is greatly increased. Cancer patients who cannot be cured, they are being treated to lengthen their life span, or delay their death. In spite of this, questions arise as to when to stop treatment and how much the patients should or can pay for medication. [22]

Elderly cancer patients are usually chronic patients and need long-term treatment. The declining course of the disease alternates with recessions and exacerbations that deeply affect not only the patient, but also the entire family, and therefore all the members need help. [16]

Elderly cancer patients, who over time have multiple problems and increased health needs, require intensive supportive nursing care in order to reduce exacerbation, uncertainty and anxiety and increase self-esteem, general wellbeing, as well as their immune function and their survival. [23]

The pathologies that are common in the elderly, such as cardiovascular disease, arthritis or hypertension, can affect the recovery and treatment of cancer. Other causes are of practical and emotional nature. For example, elderly people are dependent on other people for their transportation and access to their treatment services. Independence is a very important factor affecting their treatment. Each cancer patient faces various difficulties and has the need to be informed of anything related to his or her illness, in order his anxiety to be reduced. [24]

Elderly patients differ from other age groups in terms of pain, which does not occur with the same intensity as in the young. Their pain is blunted and often the elderly do not report it. They think it coexists with their age and it will pass. [14, 15]

Increasing age is accompanied by various physical

and psychological changes, which adversely affects the already severe toxicity of chemotherapy drugs. It is normal for the cathodic aging procedure that normally follows the DNA of cells in the elderly not to accept the smooth admission of toxic drugs to the already aged body. Furthermore, body organs of the elderly cannot perform their work with maximum efficiency, so the administration of such a toxic treatment is expected to cause side effects, such as organic deficiency or septic shock. [25, 26]

6. Treatment of Elderly Patients with Cancer

The treatment of the elderly cancer patients is an important part of everyday practice. It is necessary to know the characteristics and the plethora of problems of the elderly in order to make therapeutic decisions for the administration of specific therapies, such as chemotherapy, radiotherapy and molecular targeted therapies. [13]

People of the same age have a great heterogeneity regarding their physical condition, their organic reserves and their activity. Many people over the age of 65 continue to be active and they work similarly to those of the younger aged group. It becomes necessary to separate the elderly patients into subgroups, with as much individualized assessment as possible, in order to decide the best treatment for their disease. [27]

Mental function should be significantly taken into account in the overall assessment of cancer patient. It is known that in the general population, dementia is an independent prognostic survival factor. Assessment of the mental status is particularly important prior to the onset of chemotherapy in elderly patients, in order to ensure patient compliance with specific medication and the ability to understand the need for assistance in the occurrence of side effects or toxicities from the antitumor drug therapy. [23, 28]

Knowledge of all drugs taken for the co-existing medical problems in geriatric patients is an important element in the assessment of their clinical status. Combining these changes with polypharmacy, which is

common in the elderly, causes an increased risk of side effects. [23] Thus, it is useful to have complete knowledge of all drugs taken in order to interrupt what is not strictly necessary, and to predict possible interactions and side effects of their administration. [27]

As regards therapeutic interventions in cancer patients, the following are highlighted: [13]

Surgical treatment is the first therapeutic option for the majority of solid tumors. Elderly patients appear to benefit from surgical treatment, even in high-risk interventions, despite the higher incidence of post-operative cardiopulmonary complications.

Radiation therapy is often preferred in geriatric patients, with the aim of curing or relieving it as the least toxic treatment to control tumors of the neoplasm. From the complications of radiation therapy, the elderly are more prone to mucositis due to reduced reserve of primordial multipotent mucosal cells. Regular control of the patient's nutritional status is imperative and the need of feeding should always be taken into account, even though via gastrostomy, to avoid weight loss and hypoalbuminemia. [29]

The final decision on the dose of administered cytotoxic drugs should be based on a balance among the healing capacity, the dose response rate, the general physical condition of the patient and his prognosis.

The severity of chemotherapy-induced toxicity in the elderly is more severe compared with younger patients resulting in difficulties of medical decisions about the followed treatments. The co-morbidity observed in the elderly is the reason of their exclusion from the experimental studies, thus, little is known about the effects caused by existing health problems in additional toxicity of chemotherapy. [30]

Finally, the elderly cancer patient, like any other cancer patient, needs help in organizing and accessing healthcare services. They have to rely on family, friends and anyone who can give them high quality care. They should also take advantage of the support of each source and service. In the elderly with cancer, the

age is a number. Each has a different level of health and independence, and a different treatment prediction. [31]

7. Conclusions

As known, man is an organic complex, which over time is being altered and aged. The clinical picture of the elderly cancer patient is characterized by varying degrees of symptomatology and disability. It is common for the elderly patient to be indifferent, to degrade his/her health state, or unable to understand it. Thus, when the clinical picture of the patient is of multiple pathology, the elderly patient needs to be encouraged to express himself to obtain the appropriate laboratory and imaging examinations, treatment, and special care required. [32]

Therefore, communication with the elderly should be under certain circumstances in order to be efficient. The interpersonal relationships of healthcare professionals with the elderly cancer patient can achieve remarkable recovery rates, while giving them courage and a desire for life. [33]

The main nursing care goal is the limitation of biological and atomic forces and characteristics' loss and the adjustment of the elderly to the different phases of the disease. Finally, in the later stages of the disease, the nurse often provides just palliative care.

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