

# Cancer, Palliative Medicines, And the Therapeutic and Psychological Role

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**Abstract:** The word cancer brings a few different thoughts and feelings to those it affects as well as those who are not affected. Many people have dealt with cancer in some way or another, whether it is through a family member, a friend, or through medical treatment. As an illness, it is the source of a great deal of debate and argument as to its etiology, the best methods of treating the disease, and for some, its ultimate meaning.

**Keywords:** cancer, palliative care, palliative medicines, therapeutic, psychological, quality of life

## 1. Introduction

Cancer is a disease that can cause many different symptoms, and these can vary greatly depending on the type and location of the cancer. Symptoms such as fatigue and weight loss may be shared between many different types of cancer and may also be common in other diseases. Other symptoms are more specific to the location of the cancer. For example, lung cancer can cause coughing and shortness of breath, while cancer of the digestive organs may cause abdominal discomfort with altered bowel habits. Finally, there are symptoms that occur as a result of the tumor exerting pressure on surrounding organs or growing into vital spaces in the body. This pressure can cause localized pain, whereas, if an organ partially loses its function, it may result in potentially life-threatening complications. (Koo et al.2020)[1]

Cancer has been described as a genetic disease as it involves an accumulation of mutations to the cell's DNA. These mutations can be caused by a number of different factors which may damage DNA and affect its normal function. Duration of exposure can play a role in the cause of cancer; it is said that the longer someone is exposed to a certain factor, the greater the chance of cancer developing. This is particularly the case with factors such as tobacco usage or harmful chemicals. Alternatively, high levels of exposure to certain forms of radiation such as UV rays from sunlight or X-rays can also increase the risk of cancer. Finally, mutations may be inherited from parents. At present, there are over 100 different types of cancer, each being defined by the type of cell it affects, possibly compounded by the location of the cell in the human body. Each type is a differing disease and may necessitate different methods of treatment. (Carusillo & Mussolino, 2020)[2]

It is a severe and often life-threatening disease, marked by the uncontrolled division of abnormal cells in a part of the body. If these cells are not stopped from multiplying, they can spread into surrounding tissues, a process known as invasive growth. This may result in the formation of a lump or tumor. The growth is considered malignant if these tumor cells begin to move around and invade other parts of the body. This process is known as metastasis, and is the cause of what often makes cancer a fatal illness. (Majidpoor & Mortezaee, 2021)[3]

### 1.1. Definition of Cancer

A commonly quoted modern definition of cancer taken from the National Cancer Institute states that cancer is a "term for diseases in which abnormal cells divide without control and can invade nearby tissues. Cells can also spread to other parts of the body through the blood and lymph systems." This implies that it is the malignant potential and likelihood of adverse clinical outcomes due to uncontrolled growth and metastasis that distinguishes cancers from their benign counterparts. However, this definition is likely to have been chosen for the purposes of enabling cancer to be studied as a singular entity, as the writer himself acknowledges that the term "cancer" is used in a loose context, with the implications of how it is going to behave and what the clinical outcomes are going to be. (Matthews et al.2022)[4]

The problem of definitions is inevitably tricky, not only because any definition is the product of a human construct and social conventions, but also since the definitions harden into received wisdom, obscuring the process by which they were achieved.

Particularly in the case of cancer, definition is problematic. The etymological meaning of the word 'cancer' is a crab, and it was Galen who considered it so called because the swollen blood vessels around inflammatory cancers with an overlying intact epidermis looked like the limbs of a crab. In modern medicine, it is widely regarded that cancer encompasses a range of diseases, all involving unregulated cell growth. These cells are capable of invading and spreading to other tissues in the body, a process known as metastasis. (Nenclares & Harrington, 2020)[5]

## 1.2. Importance of Palliative Medicines in Cancer Care

Palliative care is an area that is extremely important in the care of cancer patients, but which has been largely overlooked in terms of the effectiveness of the treatments offered. This is partly due to the nature of palliative care, which is often seen as care that is given at the end of life and thus is not as applicable to a disease that has a broad range of survival rates depending on the type and staging. However, it is also because palliative care, and particularly the use of palliative medicines, has become synonymous with the care of the elderly, both within and outside of oncology. This is even though in some cases, e.g. bone sarcoma, the patient population is very young. And it is certainly not the case that effective, safe, and targeted symptom control is something that is only of relevance to the elderly. (Virdun et al.2020)[6]

## 2. Palliative Medicines for Symptom Management

The relief of cancer pain by the systematic stepped care approach as outlined by the World Health Organization in 1986 has become something of a paradigm in the effective prescribing of palliative medication. A four-step approach is outlined, in which step one suggests the use of non-opioid medications. Paracetamol or non-steroidal anti-inflammatory drugs (NSAID) can be effective in palliating mild to moderate pain. The inclusion of the adjuvant drugs (step 1.5) such as corticosteroids, antidepressants, or anticonvulsants may provide added analgesia in cases where dual pathology exists (e.g. depression and neuropathic pain). Opioids form the principle at step two and three and are safe and cost-effective as first-line treatment of moderate to severe cancer pain. For patients with no history of constipation or obsyopia, oral morphine is advised as the drug of choice at step two. Dosage begins at 20mg daily in divided doses and titrates upwards until pain is relieved. Step three, which is usually cancer pain of moderate to high severity, suggests the use of stronger opioids, for example, oral hydromorphone or transdermal fentanyl patches. The strong evidence base for its effectiveness in relieving pain means that opioids commence to first-line medication rather than as a last resort. The use of adjuvants and regular antacids in conjunction with any opioid regimen is advised at step four. Pain which is unresponsive to step three or optimally dosed strong opioids is considered difficult, and alternative therapies such as nerve blockade or, in severe cases, neuroablative surgery should be considered. (Ferro-Uriguen & Beobide-Telleria, 2022)[7]

In his seminal essay on pain, the author and physician Robert Johnstone observed that "The desire for pain relief...[is] an important human need." Symptom control, indeed, it's very antithesis, is paramount in comfort-focused palliative care, where the emphasis is summed up by the slogan "add life to days, when days no longer can be added to life." (Bergbom et al.2022)[8]

### 2.1. Pain Relief and Palliative Medications

Some people with cancer can have pain from the time of diagnosis; others develop pain as their cancer progresses. Nevertheless, there is effective pain control for the vast majority of cancer patients if the right medication is used. It has been estimated that about 90% of cancer pain can be relieved if the correct principles of pain control are applied. The management of pain related to cancer and its treatment is now well understood by doctors and nurses. Pain control is such an important aspect of cancer care that appropriate treatment can significantly affect the outcome of the disease. This is because patients who are experiencing uncontrolled pain are less able to tolerate treatment for their cancer. By having effective pain control, patients are able to have more aggressive treatments such as surgery, chemotherapy, and radiotherapy. Pain can affect all aspects of a patient's life and by having good pain control, quality of life can be maintained. In the later stages of the disease, the aim of pain control may change from attempting to cure the pain to alleviating the distressing symptoms to improve the patient's quality of life. Palliative care has four simple goals to watch over people with serious illness. First, it gives these patients a say in their own care. Second, palliative care is focused on managing the pain and symptoms of cancer. The third purpose of palliative care is to give cancer patients a chance to function as best they can. Finally, palliative care affords the necessary support to sustain the very best quality of life possible for the patients and their families. (Liu & Lin, 2020)[9]

### 2.2. Palliative Medicines for Nausea and Vomiting

Nausea and vomiting are very distressing symptoms for patients. They have a huge impact on quality of life and functional status. They can be psychologically devastating and socially embarrassing. Despite this, they are often poorly treated. It is important to have a systematic approach to the treatment of nausea and vomiting. Often, a single drug is not effective and a combination of treatments may be required. It is important to treat any underlying cause of nausea and vomiting. If there is an obstruction or raised intracranial pressure, this must be treated directly. A common cause is gastroparesis due to opioid treatment. This often requires reducing or stopping the opioid and treating with metoclopramide or switching to a different opioid. Corticosteroids have a role in treating raised intracranial pressure and may improve nausea associated with this. Olanzapine is an atypical antipsychotic which has

been shown in a randomized controlled trial to improve nausea and appetite in patients with advanced cancer. There was a significant decrease in nausea and an improvement in quality-of-life measurement scores. This suggests it is quite an effective agent in the treatment of nausea and is also useful in patients with a poor prognosis who are often at higher risk of medication-induced side effects. Olanzapine has the additional benefits of being sedative and helping with anxiety and can be particularly useful in patients with nausea and vomiting of a psychological cause. (Navari et al.2020)[10]

### **2.3. Palliative Medicines for Fatigue and Weakness**

A considerable proportion of fatigue and weakness that cancer patients experience is a result of cancer treatment or the cancer itself. Anemia is a common cause of fatigue and weakness in cancer patients, both of which may also be symptoms of the anemia. A symptom related directly to a reduction in red blood cells and oxygen delivery around the body, this can be a debilitating condition. There are also often multiple contributory factors towards fatigue and weakness in cancer patients, including both physical and psychological elements. It is important that treatment to symptomatically relieve fatigue and weakness take into account complex individual patient's situations. (Abiri & Vafa, 2020)[11]

Fatigue and weakness are the common symptoms experienced by cancer patients, which may significantly affect the patients' normal function and quality of life. There are many causes of fatigue and weakness in cancer patients, including the cancer itself and also the treatments given such as chemotherapy, radiotherapy, hormonal therapy, biological therapy, surgery, and also some medications. Patients may also experience fatigue, weakness, or malaise as a result of associated anemia or infections. It is therefore important to identify and treat any reversible causes of fatigue and weakness. However, treatment aimed at relief or reversal of the causes may not always be possible, and a palliative approach may be required. (Henson et al.2020)[12]

## **3. Psychological Support in Palliative Care**

This aspect of patient care has been traditionally neglected and it has often been assumed cancer patients will automatically receive psychological help through their access to medical staff, or that those who are particularly distressed will request psychiatric referral. However, cancer patients face multiple stressors: diagnosis, treatment, uncertainty regarding their future, financial difficulties, and altered family and work roles. These stressors can cumulate into mood disorders such as depression or anxiety, which if left untreated can have a serious impact on patient quality of life and adherence to medical treatment. A recent study by the Royal College of Psychiatrists has suggested only 24% of psychological morbidity in cancer patients is detected by medical staff. This suggests making psychiatric services an optional resource only is not an effective means of managing psychological morbidity in cancer patients. (Varani et al.2021)[13]

### **3.1. Importance of Psychological Support for Cancer Patients**

In order to better understand the most appropriate intervention for different patients, and which patient may benefit most from a particular intervention, it is helpful to conceptualize the psychological burden of cancer in terms of normal and expected reactions to a significant life stressor, specific psychiatric syndromes, and existential suffering. (Caruso & Breitbart, 2020)[14]

Given that it has been well established that the cancer experience can have a significant impact on patient and family quality of life, the provision of palliative care to alleviate suffering and promote well-being is pertinent to those living with chronic or advanced cancer. Psychological support is a key component of this palliative approach to cancer care and can be delivered through a variety of means tailored to address the individual needs of patients and their families. This may involve liaising with a specialist mental health team or it may be integrated into the medical treatment plan with consideration of the psychological impacts of cancer at each phase of the disease trajectory. (Greer et al.2020)[15]

The terms "palliative care" and "end of life care" are often used interchangeably with the overarching aim of providing comfort care to those with life-limiting illnesses. However, as described by Chochinov, the experience of life-threatening or life-limiting illness is not synonymous with a terminal diagnosis. To this end, the National Comprehensive Cancer Network defines palliative care for patients with cancer as disease-directed treatment and care for the symptoms and side effects of treatment. This definition contrasts with that of end-of-life care within the hospice setting and is reflective of the evolving phases of advanced cancer and the potential for disease remission or clinical stability. (Compton and Compton2020)[16]

Improvements in cancer diagnosis, the availability of new and more effective treatment options, and an increasing evidence base demonstrating the benefits of early intervention have combined to effect a shift in the perception and treatment of many cancers from fatal to chronic disease. As a result, many cancer patients are living longer and are experiencing a reduced disease trajectory. In turn, the unpredictable course of the disease, the potential for treatment-related side effects or complications, and the possibility of recurrence can have a profound effect on the psychological well-being of cancer patients. This raises important considerations for the palliative care approach provided to such individuals. (Lee et al., 2022)[17]

### **3.2. Counseling and Therapy Services**

Depression and anxiety are common among cancer patients, especially those in the terminal stages, and may affect the patient's ability to cope with the disease process and make decisions about medical care. Cancer patients often express marital and family problems as well as feelings of uncertainty concerning the future. Counseling can help the patient and family to identify problems and issues, make decisions, and enhance the quality of their lives. Studies have shown that when the cancer patient's psychological state improves, so does their physical well-being. There are different types of counseling applicable to cancer patients. Individual counseling can be directed to the patient or the family. It is generally problem-focused and provides an opportunity to talk about issues and concerns and to plan strategies for dealing with them. Medical family therapy is with a therapist who has experience and training in both illness and family systems. The role of the medical family therapist is to help the family to understand and address the ways the illness is affecting their lives and to provide guidance in making the healthcare system more effective for them. The bulk of supportive psychotherapy, however, is done by the oncologist. It can be done in conjunction with helping the patient to make treatment decisions or it can be to help the patient understand their personal response to the illness and to work through changes in life goals. Patients and families can also learn specific methods of problem solving, and relaxation techniques which may be useful. (Naser et al.2021)[18]

### 3.3. Support Groups and Peer-to-Peer Networks

Facing cancer can be difficult for anyone, however, there are a few things which are able to make the experience a little more bearable. One of these is engaging with other survivors. This can have a number of psychological benefits. Firstly, many patients will feel understood and validated when they relate their experiences to another person who has endured cancer. Much of the suffering caused by cancer does not come from the disease itself, but rather from the treatments involved. Many patients cite fatigue, depression, anxiety, fear, and a sense of isolation as the most stressful factors of cancer treatment. By hearing that other people have gone through and overcome the same hurdles, many patients feel a newfound sense of hope. Surviving cancer can often make people re-evaluate their lives and bolster the strength to overcome these feelings. Many patients cultivate deep and lasting friendships with their support group peers. This can provide emotional support not only for the patient but also for their families and caregivers. Knowing that there are others who have gone through similar ordeals may help to alleviate caregiver stress. (Koenig et al.2021)[19]

## 4 Methods

Penrose et al. (2000) compiled extensive data from voluntary organisations and analysed data from both the RCGP's Fourth National Morbidity Survey and their own national census delving into the extent and characteristics of adult patient populations using specialist paediatric palliative care services in the UK. They were able to look at a broad spectrum of illnesses and for the first time, provided statistics to confirm the common perception that children with complex continuing healthcare needs are often wrongly deemed to be a minority. Most patients were found to be living at home with their countless life-limiting conditions as it was established that 69% came from homes with a single parent and 17% from households with a statutory carer. It was shown that these severely disabled children were not equally placed in society when compared with non-disabled children, the Government White Paper 'Valuing People' and the subsequent National Service Framework (2001) for children all attempts to eliminate discrimination and this group of patients represents another example. Penrose et al. also identified the geographical distribution paediatric palliative care patients which brought to light unmet needs in some areas where it may be difficult for healthcare staff to gain experience in caring for these complex patients. In the UK, progress is being made in some areas for example; the RCPCH has set up acute general and community paediatric fellowship and grid training programs which incorporate training in paediatric palliative medicine. The identification of these patients could help determine the level of this training that is required specific to paediatric palliative care in different areas and perhaps instigate the delivery of paediatric palliative care services closer to home. Although recent data confirms that there are some limits to the entire service of specialist paediatric palliative care in the UK with a shortage of community and hospital specialist nurses and an inability in some areas to provide adequate time for paediatricians in their clinical workload to undertake additional work in paediatric palliative care (and this is work often undertaken in the doctors' own time). (Taylor et al.2020)[20]

## 5 Discussion

The potential to develop new therapies has never seemed greater, with scientific advances in many areas of biomedical research and technology. Cancer care may be a major beneficiary of advances that are now occurring. In the recent decades, "targeted therapy" has emerged as another treatment optimization strategy almost entirely under the sponsorship of the pharmaceutical industry. These agents are designed to interact with molecular targets that are believed to control the malignant phenotype produced by a cancer cell. In most cases, these new drugs are relatively specific in their action and are expected to be less toxic than conventional cytotoxic chemotherapies. If successful, targeted therapy will be combined with conventional chemotherapy and/or radiation therapy in the hope of adding an eventually curative, adjuvant treatment option for patient population now consigned to palliative therapy alone. This would raise additional important challenges and questions in the evaluation of palliative oncology treatment strategies. Efficacy endpoints for palliative therapies have typically included symptom control, quality of life, and survival duration. But if some palliative patients could be cured, it becomes important to understand and quantify the impact of symptom palliation and preservation enhancement in functional status on the probability and rate of disease

eradication and the patient's survival and potential for cure. If better oncology interventions (including those aimed at cure) are intended to be sequenced with or following palliative therapies, it will be incumbent to understand the potential impact on issues of symptom control and quality of life maintenance during and after the cancer treatment process. The emergence of "palliative concurrent care" as a treatment strategy, which seeks to optimize palliation and symptom control through the entire course of an illness while foregoing or delaying more disease-directed treatments (specifically chemotherapy). The potential continues to increase the palliative chemotherapy or other specific antitumor treatment for patients with potentially non-curable but asymptomatic or minimally symptomatic relapse or progression of their cancer. Stepwise transitions to a new where quality of life is lost despite aggressive antitumor treatment will pose further difficulty in distinguishing patient populations and assessing the comparative impact of possible palliative and direct illness-directed interventions. These developments all underscore the continued importance of understanding cancer as it affects patients and their illness experience and using that information to optimize the outcomes of palliative care. This is a rich domain of research and one in which the importance of well-characterized patient-reported outcome measures will be ever more evident. (Gambardella et al.2020)[21]

## 6 Conclusions

Few families escape untouched by the coffin of Agamemnon at some time, and they have much to teach us about the process of dying in cancer which has become so medicalized in some cultures that we have lost sight of it. In the current times when so many people die in institutions, the well-provided for hospice – though not the answer for every patient, but this is a point often missed – can provide a model of care which focuses less on active interventions to try to prolong life, and therefore less on avoidance of discussions which center around the realization of an inevitable outcome. The qualities that make palliative care medicine in its broadest sense unique, namely a concern for the whole patient, and a focus on the impact of disease and treatment upon quality of life, are in fact what define good medical practice in any field. (Pramesh et al.2022)[22]

The search for the perfect palliative regimen can afford no let up; it is our duty as physicians to ensure that we are doing the best we can for patients in these difficult times. This requires a strong background knowledge of methods and drugs as well as excellent communication with patients. The multidisciplinary approach of palliative medicine is well suited to cancer care, being a disease which requires input from many different specialties over a protracted illness. (Scott, 2021)[23]

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