Cancer patients experience many symptoms which affect their quality of life (QOL) and apart from cancer pain, cancer related fatigue (CRF) is one of the most common problems faced by cancer patients before treatment and survivors post treatment with either radiotherapy or chemotherapy or both, in cured and metastatic setting. Although CRF is a debilitating symptom affecting about 50%-90% cancer patients [1], it still remains under-diagnosed and under-treated. With the present health-care scenario emphasizing more on pre-treatment and post-treatment patient related factors affecting QOL, treatment of CRF both with pharmacologic and non-pharmacologic modalities has posed a challenge for oncologists in the absence of any established therapeutic protocols. National Comprehensive Cancer Network (NCCN) describes cancer related fatigue (CRF) as “a distressing, persistent, subjective sense of tiredness or exhaustion related to cancer or cancer treatment that is not proportional to recent activity and interferes with usual functioning” [2].

Due to the heterogenous pathogenesis and uncertain nature of CRF [3], the role of effective screening methods is of utmost importance which can herald an effective evaluation and management strategies.

The purpose of this mini-review is to emphasize, deliberate and summarize the ultimate need to identify the symptoms of CRF as we know very little on how these patients actually cope with their fatigues during and after the treatment. Apart from a general physician to whom a cancer patient may first report before being referred, even an oncologist may have insufficient understanding of CRF and its adverse effects on the QOL of these patients. Different postulates on the pathogenesis of CRF have been inferred by various studies [4, 5]. CRF may be due to adverse effects of cancer and cancer-therapy on pathophysiology of different body or organ systems. Impairment of muscle metabolism causing their deregulation, activation of inflammatory mediators and stress stimulators, activation of autoimmune system with formation of autoantibodies against body's own cells, neuropsychological impairment, disturbed circadian cycles and hypothalamic-pituitary-axis (HPA). Chemotherapy induced menopause in women and androgen deprivation in men are few other mechanism of CRF.

A patient presenting for the first time to a primary health officer, a general physician or an oncologist would complain of apart from localized pain, generalized myalgia, fatigue, both physical and mental stress, low attention span and concentration, impaired learning ability, and amnesia [6]. Other important symptoms may include nausea and vomiting which is mainly seen during or post therapy patients. Hofman et al., [7] have postulated that women complain of CRF more than men and interestingly younger patients of either sex report more cancer and therapy related symptoms than older individuals. Of note, CRF excludes cancer pain, emotional labiality and distress, treatable and reversible electrolyte and metabolic deregulation like hypothyroidism causing fatigue, pathologic myopathy, cardiac symptoms or pulmonary dysfunctions [8]. CRF screening and assessment tools are present in current clinical practice but no outstanding tool has been claimed so far. Multi-dimensional and uni-dimensional tools are the two types of CRF screening tools available worldwide [9]. Multi-dimensional tools use multiple factors for CRF and patient based questionnaires on a larger scale, includes functional assessment of cancer therapy-fatigue (FACT-F) subscale instrument, Piper fatigue scale, fatigue symptom inventory, multidimensional fatigue inventory and cancer fatigue scale. uni-dimensional tools use single factor and comprises of
Fatigue in Cancer Cured and Metastatic Patients in Our Daily Practice

Citation: Abhishek Purkayastha, Neelam Sharma, Rekha Vashisth and Nishant Lohia (2017) What We Know About Cancer Related

Patients with minor or less troublesome CRF may benefit from non-pharmacologic or self-care measures. Exercise or physical activity is an effective measure for coping with cancer fatigue. Several studies have stressed on the constructive and specific role of home-based exercises like brief walking, mild stretching of body parts till tolerable limits along with meditation and yoga in reducing CRF rates and improve QOL [11]. Regular exercise improves the health condition of patients who are undergoing radiotherapy and/ or chemotherapy and also who are on follow-up. Most cancer patients suffering from CRF complain of inability to have a sound good night sleep. Thus, any measure which provides the patient with undisturbed sleep and rest aids in improving their general conditions. Behavioural sleep exercises performed in several trials have reported positive effects on CRF induced insomnia, both in on-treatment and post-treatment patients. Several studies have indicated that a proper and nutritious diet comprising of proteins, carbohydrates, fat minerals and vitamins, combined with supplementary fortification optimize the QOL for patients. RT or chemotherapy induced nausea, vomiting, diarrhoea, mucositis, dysphagia and anorexia results in nutritional deficiencies [12].

Cognitive-behavioural therapy (CBT) has been an important additive to the before mentioned measures which focuses on the core issues like impaired cognition and memory-loss. CBT includes group therapy, stress reduction, relaxation training and fatigue related psycho-education. CBT and Hypnosis (CBTH) is another cognition remedy tool but do not have any neuropsychological test performance [13]. These tools help the patient to be both emotionally and mentally strong to face the society around them. Another arm of non-pharmacologic treatment for CRF is use of alternative medications like Ayurveda from India, Unani from Arabian countries and Chinese traditional natural medicines. Complementary therapies like yoga, meditation, and spiritual practices, do compliment the alternative therapies [14]. Complementary and alternative medicine (CAM) includes the age old therapy known as acupuncture. Moxibustion and acupuncture incorporated together have shown much improved results in treating CRF [14].

With less severe CRF being managed efficiently with non-pharmacologic measures, pharmacological treatments have become an integral part of troublesome CRF symptoms affecting adversely the QOL of patients, especially the metastatic cases. Psychostimulants, erythropoietin-stimulating agents (ESA), central nervous system (CNS) stimulants, corticosteroids along with L-Carnitine are few of the pharmacologic treatment measures used in clinical practice. Methylphenidate (MPH) is the most common psychostimulant used clinically with numerous randomised trials studying its efficacy in CRF [14]. MPH has shown significant improvement in post-chemotherapy CRF although associated with increased rates of adverse effects like nausea, vomiting and headache [15].

Epoetin (alfa/beta) and Darbepoetin are the two prevalent erythropoietin-stimulating agents which have shown a steady increase in haemoglobin levels, reduced need for repeated blood transfusions, and improvement in CRF and QOL, apart from few reports of ESA induced venous thrombosis [16]. L- Carnitine or beta-hydroxyl-gamma- Ntrimethylaminobutyric acid has been used to treat cancer-cachexia in pancreatic carcinoma patients [17] without any effect in relieving CRF in other cancers. US Food and Drug Administration (FDA) approved CNS stimulant Modafinil, used for treating obstructive sleep apnoea and narcolepsy has been beneficial in treating CRF [18], its definitive role in cancer treatment is yet to be established. Short-term use of corticosteroids like dexamethasone has been used in routine cancer ward setting for relieving CRF and cancer pain; however its prolonged usage has resulted in steroid-induced adverse effects. Parenteral use of Vitamin-C in treating RT/ chemotherapy induced CRF in cured as well as metastatic patients has shown promising results [19].

To summarize, cancer patients experience CRF which affect their QOL. Greater the symptom load, greater the levels of emotional suffering, poor physical and societal functioning and QOL. The management of CRF is a critical issue in the care of cancer patients. All health professionals including a primary physician must ensure that the symptoms are identified early and patients receive timely and appropriate CRF care. There is a need to develop measures for effective management of symptoms and to improve the QOL. Ultimately, multipronged approaches using both pharmacologic and non-pharmacologic measures will be needed to improve treatment outcomes. Also, a better understanding and interpretation of the molecular and biological mechanisms of CRF may help to devise therapeutic strategies to counter this disease process.

Acknowledgement

No fund or scholarship was used for this study.

We also like to extend our gratitude to departments of Medical Oncology, Surgical Oncology, Pathology, Radiology and Nuclear Medicine, Command Hospital (Southern Command), India.

The manuscript has been read and approved by all the authors, the requirements for authorship have been met, and each author believes that the manuscript represents honest work.

References


