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Cachexia and anorexia: cancer's covert killer

Published online: 13 March 2000
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Abstract Cachexia and anorexia are often not observed at the time of diagnosis of cancer. While the initial medical intervention for cancer patients includes antitumor therapy and pain management, the consequences of cachexia and anorexia may be ignored, to the detriment of the patient's quality of life and his or her potential response to chemotherapy. The importance of a well-defined thera-

peutic strategy to treat cachexia is in order if the patient's overall wellbeing is to improve. Presented is a review of the pharmacological management of anorexia and cachexia, including a four-step ladder approach to medical management.

Key words Anorexia · Cachexia · Cytokines · Appetite · Treatment

Introduction

One symptom that is often ominous and accompanies the cancer patient particularly during the progression of disease is cachexia. While at the time of diagnosis cachexia and anorexia may not be apparent [1–3], the metabolic consequences eventually become apparent and prognostically important [4]. Lean body weight loss leads to a failed performance and immune status. In 1995 a review of prospective studies on symptom prevalence in 1,000 patients with advanced cancer demonstrated that all had an involuntary 10% weight loss of pre-illness weight [3, 4]. Cachexia accompanies patients even before anorexia is noticed by the patient or family and can be a major contributing factor to the cause of death [4–8].

Cachexia is an involuntary weight loss of >10% of premorbid weight and is associated with muscle wasting and hypoproteinemia [6–10]. Lipid stores are depleted, and the serum albumin and prealbumin diminish as serum acute phase reactants increase [8–11]. Patients with a known involuntary 5% weight loss have a shorter median survival than patients with stable weight [4]. Patients with weight loss respond poorly to chemotherapy

and experience increased toxicity [4]. Cachexia can be an early manifestation of tumor-host interaction and is particularly prominent in neoplasia of foregut origin [12, 13]. Fatigue and weakness result from the loss of somatic proteins. Anorexia may contribute to cachexia, although dietary counseling and parenteral nutrition have little impact on cachexia [14, 15]. Aggressive dietary management and nutritional support may be important in patients undergoing surgery or antitumor therapy, though this is a controversial issue [14–16]. Cachexia may not correlate with anorexia. Cachexia does not correlate with tumor stage or tumor burden. Tumor location and host response may be important factors contributing to cachexia and anorexia [17, 18]. Finding medications to reverse the cachexic spiral will decrease or minimize weight loss and muscle weakness, improve performance status and immune function, and improve tolerance to therapy, all of which may potentially increase survival [1, 6–8].

Gastric dysmotility leads to anorexia and associated early satiety, which results in reduced caloric intake. Advanced cancers are associated with reduced gastrointestinal motility, leading to constipation, early satiety, and nausea unrelated to antitumor therapy [19, 20].