

Prevalence of Cancer Induced Cachexia in Non-Digestive Tract Malignancies: An Observational Study

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Abstract

Background and Aim: Cancer-related complications can occur throughout any phase of therapy. It could happen before, during, or after the procedure. One such multifactorial, very incapacitating condition is cachexia. Anorexia is the first symptom, which is subsequently followed by weight loss and muscular wasting. It is linked to a lower quality of life, a lesser tolerance for medical procedures like chemotherapy, and lower survival rates. When it comes to non-gastrointestinal tract malignancies, it is more serious. In this study, we assessed the incidence of cancer-induced cachexia in malignancies beyond the gastrointestinal system.

Methodology: We included 200 patients who reported with sudden weight loss and had cancer that was determined to have spread to other parts of the body than the gastrointestinal system. Cancer-induced cachexia was evaluated using descriptive statistics. Numbers and percentages were used to present all the facts.

Results: Males were more likely to get non-gastrointestinal tract cancer (56%) than females (44%). In this group of 200 patients with non-gastrointestinal tract cancer, head and neck cancer accounted for 70.7% of cases, breast cancer 14.6%, lung cancer 5.7%, ovarian cancer 4.8%, cervical cancer 2.4%, and lymphoma 1.6%.

Conclusion: Patients with non-gastrointestinal tract cancer should be informed that they should seek appropriate support as soon as they notice any unfavourable changes before, during, or after their treatment in order to avoid debilitating conditions such cancer-induced cachexia. Preventative approaches contribute to better treatment outcomes and life quality.

Keywords: Anorexia, Cancer, Non-Gastrointestinal Tract Cancer, Cancer Induced Cachexia.

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Introduction

Cancer patients' cachexia is a sophisticated metabolic disorder. It manifests as a gradual loss of weight with host reserve skeletal

muscle and adipose tissue depletion. Cancers of the gastrointestinal system are frequently linked to cachexia. Progressive weight loss in

these patients lowers their chance of life.[1]

Pre-cachexia is described by Fearon *et al.* as weight loss of less than 5% accompanied by systemic inflammatory disease (cancer). Weight loss of more than 5% accompanied by systemic inflammation is referred to as cachexia. Advance cachexia is characterised as a weight loss of more than 5% or by the combined criterion of a BMI of less than 20 and a weight loss of 2% to 5%. Between 50 to 80 percent of patients with advanced malignancies exhibit cachexia, and this condition accounts for about 80 percent of cancer-related deaths. It has a negative impact on life quality. It is a severe but underappreciated side effect of many chronic illnesses. It is one of the most significant health issues in the world. As science has progressed, we have a better grasp of the multiple contributing factors to this illness, including the impact of inflammatory mediators and the imbalance between anabolism and catabolism.

With up to half of untreated cancer patients losing weight and over a third losing more than 5% of their starting weight, cachexia is one of the most prevalent and dangerous side effects of cancer. Additionally, 20% of cancer-related deaths are thought to be caused by cachexia. Contrary to fasting, which results in fat loss while maintaining lean body mass, patients with cachexia lose weight from both compartments. Lung cancer patients who had lost 30% of their steady pre-illness weight saw an 85% reduction in total body fat and a 75% reduction in skeletal muscle protein. [2]

Total weight loss and weight loss rate are both strongly correlated with cancer patient survival, making weight loss an important prognostic indicator for cancer patients. The prognosis can be adversely affected by even a small weight loss (less than 5% of body weight). Patients who have lost weight respond to chemotherapy less well.¹The

prevalence of anorexia in cancer patients who are terminally ill is substantially higher, at about 65 percent, and ranges from 13 to 55 percent at the time of diagnosis.[3]

Depending on where the tumour is located, the amount of weight lost after diagnosis varies greatly. Patients with Hodgkin's lymphoma, acute nonlymphocytic leukaemia, and less aggressive forms of breast cancer frequently lose weight. With a frequency of 50–60%, weight loss is linked to more severe non-lymphoma, Hodgkin's colon cancer, and other cancers.

The goal of the current study was to determine how common cancer-induced cachexia was at our hospital.

Material and Methods

During the research period of June 2020 to June 2021, 200 patients with cancer other than gastrointestinal cancers who were attending the Department of Radiation Oncology for the first time were included in the current hospital-based observational study. Prior to enrolment, a voluntary written informed consent was sought. Patients diagnosed with cancer other than gastrointestinal tract cancer confirmed on histology who were between the ages of 18 and 65, patients with early-stage and locally progressed disease, and patients willing to undergo curative treatment were the inclusion criteria for the study.

Patients with gastrointestinal tract cancer, those who were younger than 18 or older than 65, those who had metastatic disease, those who were receiving palliative care, those who had co-morbid conditions like HIV or tuberculosis, pregnant women, and those who were unwilling to give their informed consent voluntarily were all excluded from the study.

Each patient got a thorough physical examination, and weight reduction of more than 5% during the previous three months was particularly observed. The BMI was

determined. Anorexia and asthenia-related information was logged. On the basis of the most recent blood tests, anaemia was assessed. Patients were treated in accordance with standard of care if cachexia was suspected. The management was not included in the current study's goal or objective; hence it was not covered. The patient information was gathered using a personalised proforma. The presentation of descriptive statistics used numbers and percentages. The pharmaceutical industry or any academic organisation did not support

the current study. Additionally, the researcher paid for every cost associated with the study.

Results

200 patients with malignancies other than those of the gastrointestinal tract were included. (112 men vs. 88 women). (Table 1) The mean age of the patients was 60.7 ± 12.9 years with a mean BMI of $24.5 \pm 4.4 \text{ kg/m}^2$. The mean weight of the patients was $61.4 \pm 13.2 \text{ kg}$.

Table 1: Patient characteristics

Sex	Number of patients	Percentage (%)
Male	112	56
Female	88	44
Total	200	100

Head and neck cancer was the most frequent presentation, followed in decreasing order by breast cancer, lung cancer, and genitourinary cancer, according to primary tumour classification by location. (Table 3)

Table 2: Site wise distribution

Site	Number of patients	Percentage (%)
Head and neck cancer	140	70
Breast cancer	28	14
Lung cancer	12	6
Ovarian carcinoma	10	5
Cervix cancer	6	3
Lymphoma	4	2
Total	200	100%

Twenty-five percent of the malignancies were localised, or stages I and II, forty-two percent were locally advanced, or stage III, and 28 percent were metastatic, or stage IV. Cancer stage was not defined in 18 (9%) patients.

Table 3: Cancer staging

Stage	Number of patients	Percentage (%)
Localized (stage 1 and 2)	41	20.5
Locally advance (stage 3)	85	42.5
Metastatic (stage 4)	56	28.0
Not defined	18	9.0
Total	200	100.0

Cachexia was observed in 100 (50%) of the individuals with cancer in the current research who did not have gastrointestinal tract malignancies. Lung cancer had a 58% prevalence, head and neck cancer had a 55% prevalence, ovarian cancer had a 40% prevalence, cervical cancer had a 33.3% prevalence, breast cancer had a 28.5% prevalence, and lymphoma had a 50% prevalence. This represents the overall prevalence taking into account both local and metastatic illness.

Table 4: Cachexia according to the site of primary cancer

Site of primary cancer	Number of patients	Patients presented with Cachexia (%)
Lung cancer	7 / 12	58%
Head and neck cancer	77 / 140	55%
Lymphoma	2 / 4	50%
Carcinoma ovary	4 / 10	40%
Cervical cancer	2 / 6	33.3%
Breast cancer	8 / 28	28.5%

Cachexia was observed in 12% of individuals with early cancer (Stage 1 and 2) and 36% of those with locally advanced disease (Stage 3). Patients with locally advanced disease had a higher rate of cachexia than patients with local disease. Highest prevalence of cachexia (80%) was seen in patients with metastatic disease. While it was 25% in those whose cancer staging was not defined.

Table 5: Stage wise cachexia presentation

Stage	Total Number of patients	Number of patients with Cachexia	Stage wise (%)
Localized (Stages 1 and 2)	41	5	12%
Locally advanced (Stage 3)	66	30	36%
Metastatic (Stage 4)	82	65	80%
Not defined	20	5	25 %

Discussion

In the current investigation, cachexia prevalence in patients with malignancies other than gastrointestinal tumours was assessed. There is a paucity of literature on research relating to cachexia's impact in non-gastrointestinal tract tumours, despite numerous reports of its crippling effects in gastrointestinal tract cancers.

We discovered that cachexia was common among these cancer patients. Overall, it was determined that the prevalence was very high—around 50%—and that it was higher in advanced-stage (Stage 3) and metastatic tumours (Stage 4) than in local cancers.

According to Argiles *et al.* [9], cachexia prevalence in cancer patients ranged from 50 to 80%, which is close to the results of our study. In the study, men make up the

majority. In their study, Vagnildhaug *et al.* [10] also found that men had a considerably higher prevalence of cachexia.

Head and neck cancer was the most prevalent type of cancer, and in decreasing order, it was breast cancer, lung cancer, ovarian carcinoma, cervical carcinoma, and lymphoma. Additionally, Vagnildhaug *et al.* [10] showed that individuals with lung cancer had a greater incidence of cachexia (36%). The majority of the patients were in stage 3 (locally advanced), followed by stage 4 (metastatic). While our analysis indicated a greater prevalence of cachexia in these individuals, Vagnildhaug *et al.* [10] reported no significant difference in the prevalence of cachexia in metastatic (24%) and localised disease (19%).

Cachexia was most frequently observed in malignancies of the lung (58%), head and neck (55%), lymphoma (50%) and ovary (40%). Compared to other malignancies, it was less common in breast cancer (28.5%) and cervical cancer (33.3%). The present study's drawback was the lack of management follow-up for these cachexic patients, which prevented evaluation of the long-term result.

Conclusion

Cachexia is very common and affects people of both sexes who have malignancies other than those of the gastrointestinal tract. Patients with metastatic disease and locally advanced disease are more likely to present with cachexia. Early detection and therapy will enhance the treatment success and quality of life for patients with tumours other than the gastrointestinal tract because cancer-induced cachexia is a wasting syndrome that raises mortality.

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