

Cachexia: The physical and psychosocial impact



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Aims

- What is cachexia & why should we be concerned about it?
- Consider the impact of anorexia in cachexia
- What are the physical and psychosocial effects of cachexia
- Identify our role in the management of patients with cachexia



What is Cachexia?

Cachexia in any disease refers to a state of severely and pathologically low weight, due principally to the loss of mass of tissues other than fat

- a serious and under-recognised consequence of cancer (von Haeling and Ankers 2010)
- Cachexia is a hallmark of certain diseases including cancer and COPD (Wagner 2008)



What is cachexia?

“a multifactorial syndrome characterised by an ongoing loss of skeletal muscle mass (with or without loss of fat mass) that cannot be fully reversed by conventional nutrition support, and progressive functional impairment. The pathophysiology is characterised by a negative protein and energy balance driven by a variable combination of reduced food intake and abnormal metabolism.”

Fearon et al 2011



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Prevalence

- ❖ Prevalence of **cancer** cachexia is high, ranging from 50-80% in advanced cancer (von Haeling and Ankers 2014)
- ❖ 20 – 40% of people with **COPD** have cachexia (von Haeling 2010)



What does cachexia look like?

The word cachexia has Greek roots, “kakos” meaning bad and “hexus” meaning habit, appearance, condition.

Cachexia has been known for centuries (von Haehling 2010) and was described by Hippocrates “...the shoulders, clavicles, chest and thighs melt away” (Katz and Katz 1962).



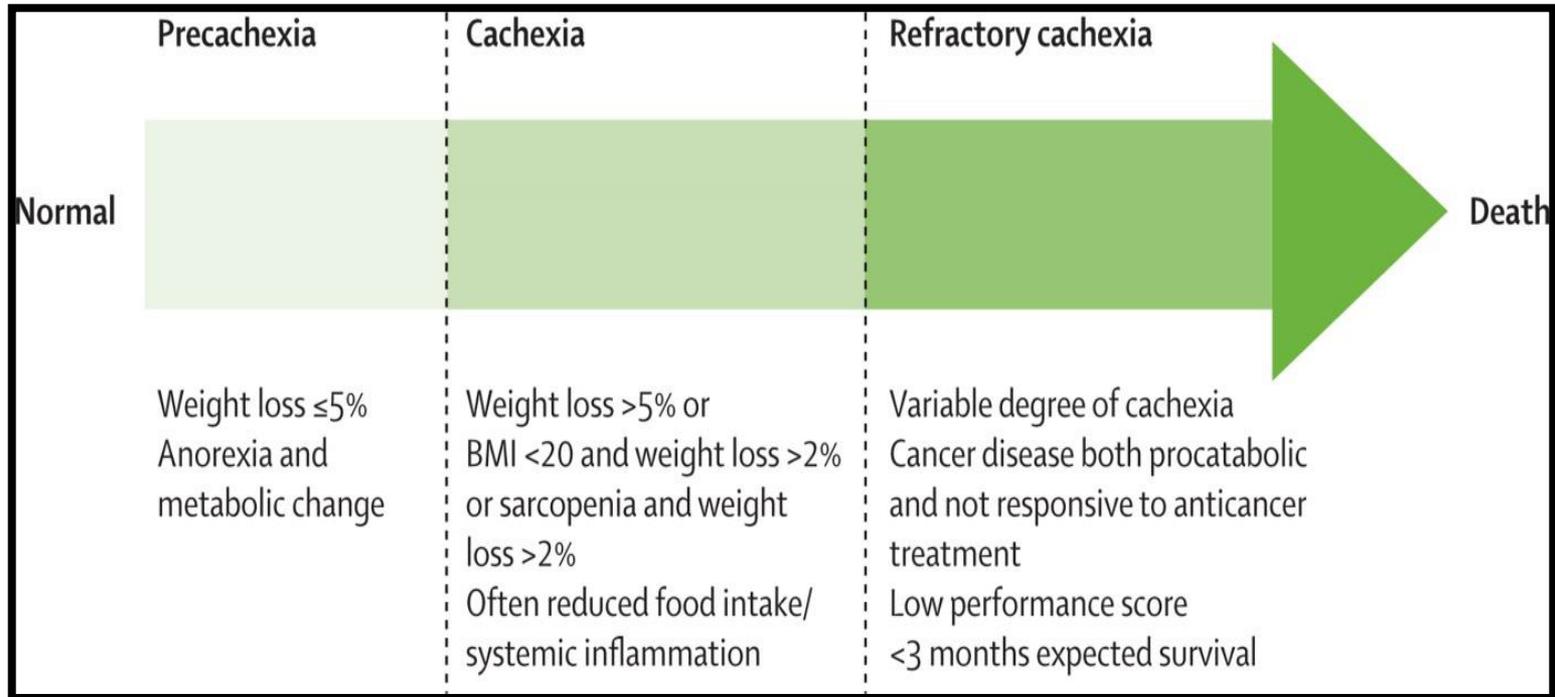
Some terms:

Term	Definition	Ref
Anorexia	loss of appetite and diminished intake. Prevalent in cachexia	Poole and Frogatt 2002
Malnutrition	<p>A state of nutrition in which a deficiency of energy, protein and/or other nutrients causes measurable adverse effects on tissue/body form, composition, function or clinical outcome.</p> <p>Can be treated and reversed with nutritional therapies including food fortification, use of enteral and parenteral nutrition</p>	<p>Elia 2003</p> <p>Stratton and Elia 2014</p>
Weight loss	voluntary or involuntary decrease in body weight weight loss	
Cachexia	characterised by involuntary weight loss that is difficult to reverse	Fearon et al 2011



Stages of cancer cachexia

(Fearon et al 2011)



Three stages of Cachexia

Stage 1: Pre-cachexia - represented by **weight loss $\leq 5\%$** , anorexia and metabolic change.

Stage 2: Cachexia - represented by **weight loss $\geq 5\%$ or BMI ≤ 20 kg/m² or sarcopenia** (loss of muscle mass) and weight loss $> 2\%$, reduced food intake and systemic inflammation indicated by raised C-reactive protein.

Stage 3: Refractory cachexia – where cancer disease is both pro-catabolic and non-responsive to anticancer treatment; low performance score; and ≤ 3 month survival expected. Refractory cachexia cannot be reversed.



How is cachexia identified?

- At present there are no robust biomarkers to identify those pre-cachectic patients who are likely to progress further or the rate at which they will do so.
- Refractory cachexia is defined essentially on the basis of the patient's clinical characteristics and circumstances.



The extent of the problem – why should we be concerned?

- Anorexia ranked as one of five most challenging problems (Behl et al 2007)
- Poor appetite and weight loss are ranked 5th and 6th in prevalence of symptoms that may affect nutritional intake (Teunissen et al 2007)
- it is associated with poor quality of life (von Haeling and Ankers 2014; Caro et al 2007).



Other factors affecting food intake

Physical factors

Constipation

Malabsorption

Mucositis

Nausea and vomiting

Obstruction (along G-I tract) or dysphagia (swallowing difficulty)

Oral problems such as oral thrush, dry mouth

Pain

Psychological factors

Anxiety

Depression

Inability to sleep

Spiritual distress

Family worries

Hemming and Maher 2005; MacDonald et al 2003



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Causes of anorexia in cachexia

- Anorexia is a complex factor in cachexia influenced by both physiological and psychosocial factors.
- Anorexia is caused by the tumour cells producing **cytokines** including tumour necrosis factor (TNF), interleukin-1, interleukin-6 & interferon- γ that may directly affect appetite (Shaw 2011).



Causes of anorexia in cachexia

Cytokines cause **alterations** in carbohydrate, protein and fat metabolism including:

- glucose intolerance,
- insulin resistance,
- increased lipolysis (breakdown of fat)
- increased skeletal muscle catabolism (breakdown)

resulting in weight loss (Holder 2003).



Treating anorexia in cachexia

- Anorexia is difficult to treat
- some single agents e.g. steroids, may improve appetite for a short period
- poor appetite is just one element of cachexia
- success in reversing weight loss is limited

(Fearon 2008)



Treating anorexia in cachexia

A range of interventions for the management of weight loss in cancer patients have been examined including:-

- appetite stimulants eg short-term steroids
- interventions inhibiting inflammatory cytokines
- anabolic agents to influence protein metabolism

However studies have failed to demonstrate unequivocal efficacy (Baldwin 2011)



Impact of cachexia



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Physical impact of cachexia

Loss of muscle mass (and weight) is not usually reversible.

Impact on muscle mass on strength



Impact on function

(Fearon et al 2011)



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Physical impact of cachexia

To estimate effect on physical function, routine assessment of physical activity is recommended.

Method of choice in order :-

- Patient-reported physical functioning eg: EORTC QLQ-C30
- Physician reported activity using e.g Karnofsky score
- Objective measures such as activity meters and specific activities.

(Fearon et al 2011)



Exercise and Cachexia



Exercise and Cachexia

- Exercise may attenuate the effects of cachexia by modulating muscle metabolism, insulin sensitivity and levels of inflammation.
- Even in advanced disease peripheral muscle can respond to exercise training
- However, exercise tolerance for people with cachexia is poor
- Consider early intervention, lower intensities and various forms

Maddocks et al 2011



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Psychosocial impact of weight loss in cachexia

Weight loss has not only a physical impact but includes psychosocial consequences that may compromise quality of life. (Higginson and Winget 1996)

Psychosocial effects are defined as negative emotions associated with reduced dietary intake, involuntary weight loss and the social consequences of these symptoms (Hopkinson et al 2010)

Negative emotions including sadness, disappointment, bewilderment, anger, frustration, anxiety and existential distress (Oberholzer et al 2013).



Psychosocial impact of weight loss in cachexia

- Anorexia has important emotional significance because food and eating are essential for survival
- Preparation and serving of food is an expression of love and caring.
- Eating and drinking is central to everyday life for both the nutrition it provides and its powerful social, emotional and cultural meanings

(Eldridge 2011).



Nutrition is not just about the nutritional value of food

- Nurture
- Love
- Socialising
- Sharing
- Normality

Powerful emotions around eating and drinking



MSc research project

What psychosocial support can healthcare professionals provide to patients who experience weight loss due to cancer cachexia?

A qualitative study of the experience of weight loss in patients with advanced cancer



MSc research project

Aims:

- To describe the experiences of weight loss in people with advanced cancer.
- To explore what psychosocial support patients believe that HCPs can give and to develop recommendations for future clinical practice.



Methodology

- Semi-structured, qualitative interviews of participants with advanced cancer who expressed distress around weight loss.
- Interviews transcribed verbatim
- Thematic content analysis



The physical impact of weight loss

All participants described the physical impact of weight loss which links strongly with the psychosocial effect described in this theme.

Being unable to function normally for the participants had a significant impact on their quality of life, how they viewed themselves and how others viewed them.



The physical impact of weight loss

P8 was 56y female with GU cancer

She described the impact of the lack of energy and the frustration she felt at not having the energy to do the simplest of things:

“Something funny happened. My daughter made me laugh. And I’m like, a belly laugh, you know, a really good laugh. I had to sit down. That just wore me out, just having that laugh. It’s ridiculous”.



The physical impact of weight loss

- The frustration and sadness at not even being able to have “a really good laugh” resonates with other changes for her such as no longer being able to work and having to use a wheelchair.
- The lack of energy experienced by participants affected how they were able to manage their daily lives and changes they made such as rearranging their living accommodation to avoid using the stairs



Impact on Body image and identity

- ❖ Participants described their feelings about how weight loss had altered their views on their identity, both physically and emotionally.
- ❖ The phrase “skin and bones” was used by several indicating the diminishing of the person. It evoked expressions of sadness and the visible manifestation of their illness.



Impact on Body image and identity

52y male with melanoma

“I’ve never been big boned, I’ve always been slight but I’ve always been able to lift my own bodyweight. And I’ve always, you know, I’ve always had a little bit of muscle. I’ve got none, I’ve got hardly any muscle. I’ve got hardly any flesh. I am literally skin and bone.”



The impact of cachexia

Participants commonly used the phrase “wasting away” to describe what was happening to them.

56y female with GU cancer : “... *it's at that point when it [weight] goes down and down and down, and you know what you look like already and then you think, “Oh my gosh, you know, what's wrong with me? It's not going to be my problem. I'm just going to waste away...”*”)



The impact of cachexia

53y female with GI cancer

“But then I mean obviously I know you have to eat to survive, you know..... And it is a worry, you know, I mean that you’re losing weight all the time.”



Being weighed – a “tick box” exercise

Participants lost weight over a period of time with no specific support being put into place to address this:

52y, male, melanoma

“They weighed me every week I went to clinic. And every week, every week I was dropping weight” I – yes, I’ve lost 10kgs, what, 10kgs in 9 months. And they haven’t really addressed it because they haven’t really spotted it”.



Summary

- Cachexia has a range of physical and psychological consequences
- Patients and their families are concerned about weight loss
- Open up opportunities to talk about weight loss
- Even if weight loss cannot be prevented or reversed, patients and their families are often reassured when they understand what is happening and why.



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Thank you!

Any questions?

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