Cardiac cachexia: diagnosis is more complicated than focusing on weight loss

Cardiac Cachexia: Diagnosis is more Complicated than Focusing on Weight Loss

Donna Fitzsimons [1], Loreena Hill [1], Matthew A. Carson [1], Lana Dixon [2], Patrick Donnelly [3], Susan E. Piper [4], Gareth Thompson [1], Theresa A. McDonagh [4], and Joanne Reid [1]

[1] School of Nursing and Midwifery, Queen's University Belfast; [2] Royal Victoria Hospital, Belfast Health and Social Care Trust; [3] Ulster Hospital, South Eastern Health and Social Care Trust; [4] Kings College Hospital NHS Foundation Trust

Background

Cardiac cachexia is a complex catabolic disorder that may present in patients with advanced heart failure (HF)[1]. This syndrome is characterised by weight loss, muscle wasting, and reduced quality of life[1]. Clinical application of the recommended diagnostic criteria by Evans et al.[2] is challenging in HF because of fluid retention. This can 'mask' symptoms, preventing effective detection and management of cardiac cachexia by healthcare professionals in practice.

Purpose

To report the practical challenges of applying the Evans criteria within an advanced HF population.

Methods

A cross-sectional study was conducted in 200 patients with advanced HF. Patients were recruited from HF clinics and inpatient wards across the BHSCT and SEHSCT.

Table 1. *Inclusion and exclusion criteria.*

Inclusion Criteria	Exclusion Criteria
Age ≥ 18 years	Age < 18 years
Able to read, write and speak English	NYHA class I-II
NYHA class III – IV	
Physically and mentally capable of participation	
Willing to be involved	

Patients were assessed for cardiac cachexia based on the Evans et al.[2] diagnostic criteria.

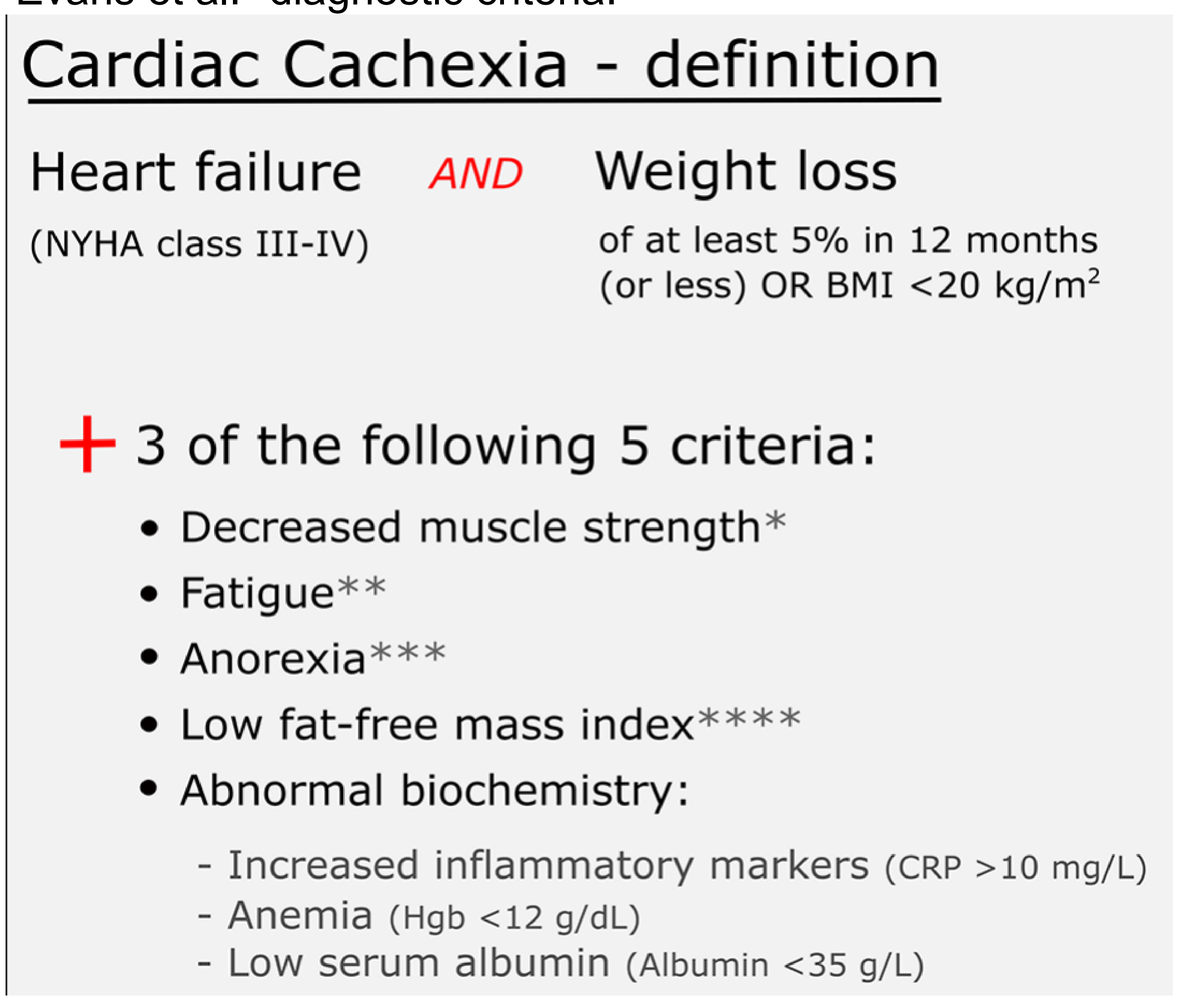

Figure 1. *Diagnostic criteria[2], adapted from Carson et al.[3].*

Results

30 out of 200 participants (15%) were identified with cardiac cachexia. The cachectic group showed significantly lower anthropometric measures (see Table 2), higher CRP (30.7 vs 15.3), lower albumin (37.9 vs 40.2), and lower RBC count (3.8 vs 4.2) than the not cachectic group.

Results cont.

Table 2. *Anthropometric measures, adapted from Carson et al.[3].*

Outcome measure	All (n=200)	Not cachectic (n=170)	Cachectic (n=30)	Sig.
Weight (kg)	82.8 ± 24.9	86.7 ± 24.5	61.4 ± 13.9	<0.01
BMI	28.6 ± 7.6	29.9 ± 7.4	21.8 ± 4.4	<0.01
Non-oedematous weight loss 1 year (kg)	2.0 ± 3.6	1.1 ± 2.3	7.1 ± 5.4	<0.01
Mid upper arm circumference (cm)	29.9 ± 5.2	30.8 ± 4.9	25.1 ± 3.7	<0.01
Skinfold thickness (mm)	15.5 ± 6.7	16.2 ±6.67	11.5 ± 5.2	<0.01
Upper arm muscle circumference (mm)	250.9 ± 37.6	257.1 ± 35.5	215.4 ± 28.6	<0.01
Upper arm area (mm²)	73.5 ± 25.8	77.4 ± 25.3	51.4 ± 15.5	<0.01
Upper arm muscle area (cm²)	51.2 ± 15.5	53.6 ± 15.1	37.6 ± 10.1	<0.01
Upper arm fat area (cm²)	22.1 ± 12.5	23.6 ± 12.7	13.8 ± 7.5	<0.01
Grip strength right (kg)	16.2 ± 10.9	17.1 ± 11.2	11.4 ± 7.2	<0.01
Grip strength left (kg)	15.1 ± 10.5	16 ± 10.9	10 ± 6.3	<0.01

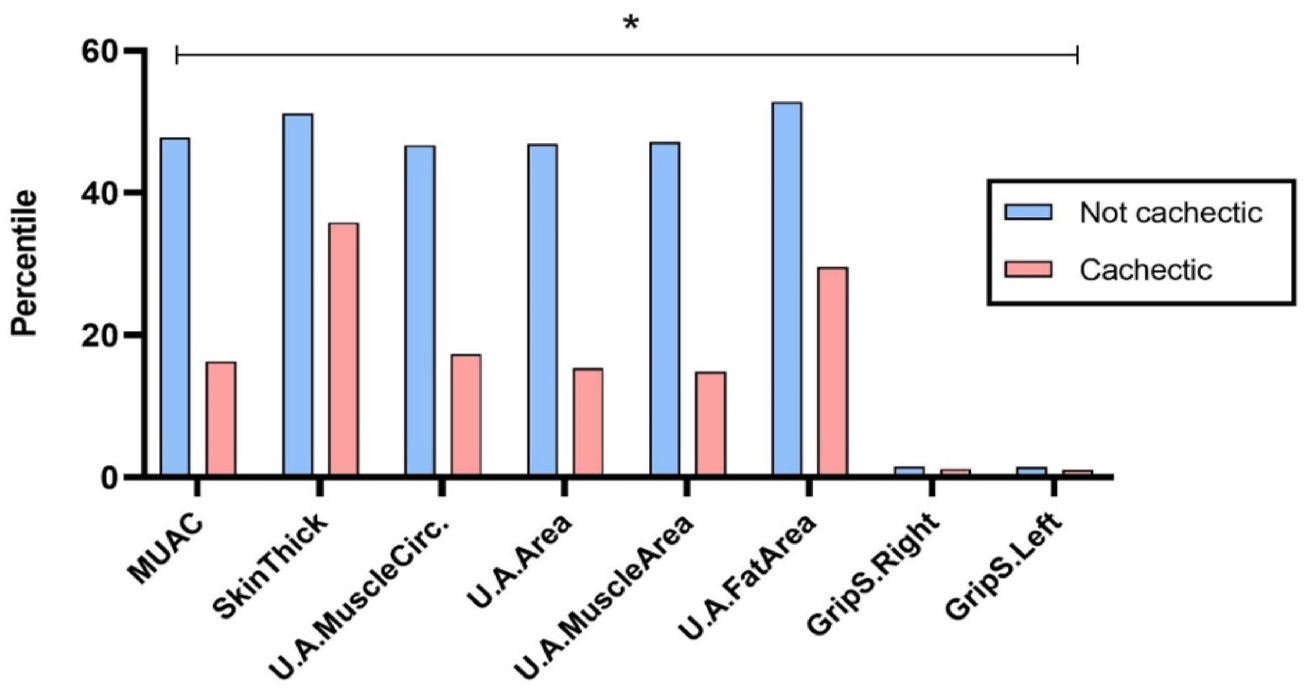

Figure 2. *Percentile scores for anthropometric measures.*

Oedema was present in 61% of the sample and 85% of patients possessed an average BMI of 29.9 kg/m² (borderline of obese classification). Only 11% of participants met the BMI cut-off of < 20 kg/m² from the cachexia diagnostic criteria. The most common diagnostic criteria displayed in the cachectic group were decreased muscle strength (80%), low muscle mass (77%), and abnormal biochemistry (74%).

Conclusion

The Evans criteria identified a 15% prevalence of cardiac cachexia. Weight loss, a primary indicator of cachexia, was challenging to detect, as 61% of the sample possessed oedema (fluid retention). Moreover, the BMI threshold for the diagnostic criteria was only met by 11% of patients, indicating a higher cut-off value may be warranted. However, decreased muscle strength, low muscle mass, and abnormal biochemistry were prevalent in the cachectic group. These measures may aid clinical identification of the syndrome. The Evans criteria are not specific to HF, with common comorbidities *(i.e.,* fluid retention and elevated CRP*)* in this population potentially leading to misdiagnosis. Future research should explore HF-specific refinement of the Evans cachexia criteria to improve identification of the syndrome in clinical practice (*e.g.,* biomarker discovery).

References

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