(RESEARCH ARTICLE)

Prevalence of cardiac cachexia among congestive heart failure patients

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Abstract

Cardiac cachexia is a serious, multifaceted condition that is linked to congestive heart failure and can strike at any age or level of ventricular function. For the diagnosis of cardiac cachexia in patients, no particular test is employed. However, specific nutritional screening methods, such as the CASCO (cachexia score), are employed to identify cardiac cachexia in patients with congestive heart failure. A prospective observational study was used. The study was conducted at a tertiary hospital. The study used the CASCO (cachexia score) tool. The objective of the study was to determine the prevalence of cardiac cachexia among congestive heart failure patients. The results of the study showed that individuals with congestive heart failure had a significantly higher prevalence of malnutrition and cardiac cachexia.

Keywords: Congestive heart failure; Cachexia; CASCO; Ventricular function

1. Introduction

Cardiac cachexia is an an ominous complication associated with congestive cardiac failure (CCF) because it depletes the protein-calorie stores of patients with chronic heart failure, especially older adults. In developing countries, heart diseases are an emerging health problem with a proportion of deaths ranging from 25% to 45% due to increased risk factors with an absence of effective preventive measures [1]. Cardiovascular disease (CVD) is now the leading cause of death in India, accounting for more than 80% of cardiovascular deaths. Coronary artery disease is a condition in which the heart muscle does not receive sufficient blood and oxygen due to obstruction of the coronary arteries. Congestive heart failure is caused by structural abnormalities, dysfunctions, and other triggering factors in the heart. [2] [3]

Cardiac cachexia is a serious and complex multifactorial disorder associated with chronic heart failure that can occur regardless of age, ventricular function, or functional classification. It is defined as at least 5% edema-free weight loss (or obesity index <20 kg / m2) in patients with the chronic disease over the last 12 months, and at least three of the following clinical or experimental criteria: Abnormal biochemistry characterized by muscle loss, loss of appetite, decreased lean body mass index, and elevated inflammatory markers [4] [5]. Skeletal muscle wasting and loss of function, called sarcopenia, often precedes cachexia and predicts adverse consequences. Non-pharmacological therapies such as nutritional support and exercise are now considered the basis of cachexia prevention and treatment. [6,7]

2. Materials and methods

A prospective observational study design was used to conduct the research at a tertiary hospital in Chennai. The current study's research protocol was approved by the Institutional Ethical Committee of Madras Medical Mission, Mogappair, and Chennai. (ECR/140/Ins/TN/2013/RR-16).

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The sample size taken for the current study was 30.The study was conducted for a period of one month. Assuming the severe malnutrition with observed portion 0.6 at 80% power and 5% level of significance derived from the study conducted by Arodiweet al. (2015). The samples were classified into three groups based on the age. Group I (35- 45 years) Group II (45-55 years) Group III (55-65 years).

2.1. Criteria for Sample Selection.

The criteria that were followed for selection of study subjects are as follows:

2.1.1. Inclusion Criteria

Adults aged 35 to 65 years old with Congestive Heart Failure, both males and females were choosen.

2.1.2. Exclusion Criteria

Subjects with other complications, pregnant women, lactating women, and adolescents were excluded. In the study, CASCO tool were used to determine the prevalence of cardiac cachexia in patients with congestive heart failure. CASCO TOOL:The CASCO tool is divided into five sections: body weight and composition, inflammation/metabolic disturbances/immunosuppression, physical performance, anorexia, and quality of life. (Evans et al., 2008; Muscaritoli et al., 2010; Fearon et al., 2011; Cederholmet al.2016)

The first components of CASCO are body weight loss and composition, which measure both body weight loss and lean body mass. Lean body mass influences the importance of body weight loss in the CASCO. Up to 20% of the cachexia score is accounted for by body weight loss and composition. CASCO's second component is inflammation/metabolic disturbances. Inflammation is a critical component of the cachectic response. C-reactive protein and other inflammatory markers (CRP). In addition to inflammation, most cachectic patients may have several metabolic disturbances, including anaemia and low levels of plasmatic albumin, plasma urea, and total protein. CASCO's third component is concerned with physical performance (PHP). Even with a relatively minor reduction

A reduction in food intake promotes changes in quality of life and also conditions many metabolic changes. Anorexia makes up 15% of the cachexia score. Finally, CASCO's final component is quality of life . Not only do changes in weight and physical performance affect quality of life, but so do metabolic changes. The quality of life contributes up to 40% of the cachexia score. These five variables, as mentioned above, clearly interact with one another and represent the most important set of variables for determining the severity of cachectic syndrome.These five different factors mentioned above, clearly interact with each other and representthe most important set of variables to assess the severity of the cachectic syndrome.Cachexia score (CASCO)- Mild cachexia ($15 \leq \times \leq 28$), Moderate cachexia ($29 \leq \times \leq 46$) Severe cachexia ($47 \leq \times \leq 100$) [8,9].

A paired t test is used in this study to evaluate anthropometric measurements,and cachexia score.

3. Results and discussion

Table 1 depicts the distribution of body weight loss among the selected samples.The percentage of mild weight loss ≥ 5% was 42.9%, 20%, and 66.75 percent among age groups between 35 and 45 years, 45 and 55 years, and 55 and 65 years, respectively. The percentages of moderate weight loss ≥ 10% were 14.3%, 20%, and 16.7% among age groups between 35 and 45 years, 45 and 55 years, and 55 and 65 years, respectively. The percentage of severe weight loss ≥ 15% was found in none of the samples among the age groups between 35 and 45 years, 45 and 55 years, and 55 and 65 years. None of the samples in the age group between 35 and 45 years, 45 and 55 years, and 55 and 65 years had terminal weight loss. Regarding the distribution of the loss of lean body mass, The percentage of mild loss of lean body mass ≥ 5% was 40%, 14.3%, and 22.2% among the age groups between 35 and 45 years, 45 and 55 years, and 55 and 65 years, respectively. The percentages of moderate loss of lean body mass ≥ 10% were 20%, 71.4%, and 16.7% among the age groups between 35 and 45 years, 45 and 55 years, and 55 and 65 years, respectively. The percentage of severe loss of lean body mass ≥ 15% includes 0%, 14.3%, and 0% among age groups between 35-45 years, 45-55 years, and 55-65 years, respectively. None of the samples among age groups between 35-45 years, 45-55 years, and 55-65 years had terminal lean body mass ≥ 20.

Issa M. Hweildi et al. (2017) predict that over the course of at least six months, the body weight of patients with congestive heart failure will significantly decrease by more than 5%. Thus, the current study is consistent with earlier research. [10]

Table 1 Body Weight Loss and Body Composition of the subjects

Distribution of body weight loss of the selected subject				
Variables	**Overall (%)**	**35– 45years (%)**	**45– 55years (%)**	**55– 65years (%)**
Weightloss<5%normal	9(30.0)	3(42.9)	3(60.0)	3(16.7)
Weightloss≥5%mild	16(53.3)	3(42.9)	1(20.0)	12(66.7)
Weightloss≥10%moderate	5(16.7)	1(14.3)	1(20.0)	3(16.7)
Weightloss≥15%severe	0(0.0)	0(0.0)	0(0.0)	0(0.0)
Weightloss≥20%terminal	0(0.0)	0(0.0)	0(0.0)	0(0.0)
Distribution of lean body mass(LBM)of the selected subject				
LossofLBM<5%normal	14(46.7)	2(40.0)	0(0.0)	11(61.1)
LossofLBM≥5%mild	11(36.7)	2(40.0)	1(14.3)	4(22.2)
Loss of LBM10%moderate ≥	5(20.0)	1(20.0)	5(71.4)	3(16.7)
Loss of LBM15%severe ≥	0(0.0)	0(0.0)	1(14.3)	0(0.0)
Loss of LBM20%terminal ≥	0(0.0)	0(0.0)	0(0.0)	0(0.0)

Table 2 Inflammation and Metabolic Response of the subjects

Group	Mean observed Plasma CRP	Expected plasma CRP	p value
35–45years(n=5)	1.90 ± 0.13	≤1mg/dlNormal	0.020
45-55years(n=7)	2.12 ± 0.47		
55-65years (n=18)	2.47 ± 0.55		
Group	Mean observed Plasma Albumin	Expected Plasma Albumin	p value
35–45years(n=5)	3.14 ± 1.11		
45-55years(n=7)	3.22 ± 0.93	5.0g/dl Normal	0.002
55-65years (n=18)	2.97 ± 0.64		
Group	Mean observed Plasma Urea	Expected Plasma Urea	P value
35–45years(n=5)	28.8 ± 7.79	36 – 43 g/dl	0.056
45-55years(n=7)	32.7 ± 15.12		
55-65years (n=18)	27.5 ± 7.22		
Group	Mean Observed Total Protein	Expected Plasma Total Protein	P Value
35–45years(n=5)	5.36 ± 1.33	8.2mg/dlNormal	0.054
45-55years(n=7)	7.07 ± 0.70		
55-65years (n=18)	5.75 ± 1.11		
Group	Mean observed Total Hemoglobin	Expected plasma hemoglobin	p value
35–45years(n=5)	11.06 ± 1.72	15.7 -17.5 mg/dl	0.003
45-55years(n=7)	11.04 ± 1.87		
55-65years (n=18)	11.75 ± 1.66		

Theabovetable 3illustratesthemeanobservedPlasmaC-Reactiveprotein, plasma albumin, plasma urea and total protein of the selected subjects. The mean Plasma C - reactive protein for Group 1 (35 to 45 years old), Group 2 (45 to 55 years old), and Group 3 (55 to 65 years old) was 1.90, 2.12, and 2.47, respectively. The anticipated level of plasma C-reactive protein is 1 mg/dl, yet all of the chosen samples had elevated levels of this maker of inflammation. Plasma C - reactive protein had a p-value of 0.020, which indicated that it was statistically significant across the three groups.

Inder S. Anand et al. (2005) found that CRP was elevated in cardiac failure. Higher levels are independently associated with mortality and morbidity and are linked to characteristics of more severe heart failure. More research is needed on how treatments affect CRP levels and how important it is for prognosis. [11]

The mean Plasma Albumin for Group 1 (35 to 45 years old), Group 2 (45 to 55 years old), and Group 3 (55 to 65 years old) was 3.14, 3.22, and 2.97, respectively. All of the group samples had low plasma albumin levels, with the predicted Plasma Albumin being 5.0 mg/dl. Plasma albumin's p-value was 0.002. The three groups had statistically significant differences. Low blood albumin levels have been linked to an increased risk of HF in the elderly, according to Deepa Gopal et al. Even if the change is within the normal albumin range, a decrease in serum albumin over time is linked to a higher likelihood of cardiovascular disease. [12] The mean Plasma Urea for Group 1 (35 to 45 years old), Group 2 (45 to 55 years old), and Group 3 (55 to 65 years old) was 28.8, 32.7, and 27.5 respectively. The normal range for plasma urea was 36 to 43 mg/dl. Plasma urea had a p-value of 0.056, which ws determined to be statistically significant.

The mean plasma total protein for Group 1 (35 to 45 years old), Group 2 (45 to 55 years old), and Group 3 (55 to 65 years old) was 5.36, 7.07, and 5.75, respectively. All of the samples have lower levels of total protein than normal, and the anticipated plasma total protein value was 8.2 mg/dl. Plasma total protein's p-value of 0.054 was determined to be statistically significant. The mean hemoglobin for Group 1 (35 to 45 years old), Group 2 (45 to 55 years old), and Group 3 (55 to 65 years old) was 11.06, 11.04, and 11.75 respectively. The anticipated range for hemoglobin was 15.7–17.7 mg/dl. Hemoglobin's p-value was discovered to be 0.003, making it statistically significant among the chosen samples.

The hemoglobin counts in the cachectic groups were much lower, according to Mathew A. Carson et al. (2022). Therefore, the current study is consistent with the earlier study. [13,14]

Table 3 Physical performances of the subjects

Distribution of particular decrease in the physical activities(i.e., a twork, at home,at leisure etc)they normally carryout during the pastweek?				
Variables	**Overall(%)**	**35– 45years (%)**	**45– 55years (%)**	**55– 65years (%)**
Notat all	10(33.3)	2(40.0)	1(14.3)	7(38.9)
Quitea bit	13(43.3)	2(40.0)	3(42.9)	8(44.4)
Verymuch	7(23.3)	1(20.0)	3(42.9)	3(16.7)
Distribution of having problems doing strenuous activities like carrying a heavy shopping The past week?				
Notat all	7(23.3)	1(20.0)	1(14.3)	5(27.8)
Quitea bit	15(50.0)	3(60.0)	4(57.1)	8(44.8)
Verymuch	8(26.7)	1(20.0)	2(28.6)	5(27.8)
Distribution of noticing loss of handgrip force during the past week?				
Notat all	7(23.3)	1(20.0)	3(42.9)	6(33.3)
Quitea bit	15(50.0)	3(60.0)	4(57.1)	9(50.0)
Verymuch	8(26.7)	1(20.0)	0(0.0)	3(16.7)
Distribution of putting more effort into climbing stairs during the past week?				
Notat all	11(36.7)	1(20.0)	4(57.1)	6(33.3)

Quitea bit	19(63.3)	3(60.0)	3(42.9)	12(66.7)
Verymuch	0(0.0)	1(20.0)	0(0.0)	0 (0.0)
Distribution of felt tired after walking approximately half a kilometre during the past week?				
Notat all	12(40.0)	1(20.0)	4(57.1)	7(38.9)
Quitea bit	14(47.6)	3(60.0)	3(42.9)	8(44.4)
Verymuch	4(13.3)	1(20.0)	0(0.0)	3(16.7)

The distribution of the subjects' physical performance is shown in table 3 above. Within the age groups of 35–45, 45–55, and 55–65, respectively, there were 40%, 14.3%, and 38.9% of participants who were not at all engaged in any physical activity.

Between the ages of 35 and 45, 45 to 55, and 55 to 65, respectively, 40%, 42.9%, and 44.4% of the respondents reported engaging in a lot of physical exercise. In the age groups of 35–45, 45–55, and 55–65, respectively, the samples with the greatest decreases in physical activity were 20%, 42.9%, and 16.7%. In the 35–45, 45–55, and 55–65 age ranges, respectively, 20%, 42.9%, and 33.3% of the patients did not experience any reduction of hand grip force. 60%, 42.9%, and 44.4% of the patients in the age ranges of 35–45, 45–55, and 55–65, respectively, experienced significant losses in hand grip force. The percentage of hand grip loss in people between the ages of 35 and 45 and 55 and 65, respectively, is relatively high at 20% and 16.7%.

In relation to the distribution of respondents who exerted more effort when ascending stairs. In the age groups of 35–45, 45–55, and 55–65, respectively, there were 20%, 57.1%, and 33.3% of subjects who put no effort at all into climbing stairs in the distribution. The percentages of subjects who exert a lot of effort when climbing stairs were 60%, 42.9%, 66.7%, and accordingly for the age groups of 35 to 45, 45 to 55, and 55 to 65. The age range of 35 to 45 years had a 20% distribution of subjects who put a lot of effort into climbing stairs, whereas the age ranges of 45 to 55 and 55 to 65 years showed less of an effort.

The distribution of respondents who became fatigued after a short distance of walking. For the age groups between 35 and 45, 45 to 55, and 55 to 65, respectively, the percentages of people who did not feel at all tired after walking were 20%, 57.1%, and 38.9%. In the age groups of 35–45, 45–55, and 55–65, respectively, the percentages of people who felt quite fatigued after walking were 60%, 42.9%, and 44.4%. Among the age groups between 35 and 45 years old and 55 to 65 years old, respectively, 16% and 20% of subjects reported feeling very tired when walking.

Table 4 Anorexia of the subjects

Distribution of appetite of the selected samples during the pastweek?				
Variables	Overall(%)	35–45years(%)	45– 55years (%)	55– 65years (%)
Good	15(50.0)	2(40.0)	4(57.1)	9(50.0)
Average	8(26.7)	1(20.0)	1(14.3)	6(33.3)
Poor	7(23.3)	2(40.0)	2(28.6)	3(16.7)
Verypoor	0(0.0)	0(0.0)	0(0.0)	0(0.0)
Distribution of eating patterns of the selected sample during the pastweek?				
Variables	Overall (%)	35– 45years(%)	45–55years(%)	55– 65years(%)
I feel full after eating most of the meal	9(30.0)	2(40.0)	1(14.3)	6(33.3)
I feel full after eating half of the meal	8(26.7)	1(20.0)	2(28.6)	5(27.8)
I feel full after eating one third of t he meal	4(13.3)	0(0.0)	0(0.0)	4(22.2)

I feel full after eating a few mouthfuls	3(10.0)	1(20.0)	2(28.6)	0(0.0)
I hardly ever feel full	6(20.0)	1(20.0)	2(28.6)	3(16.7)
Distribution of food taste during the past week of the selected sample?				
Variables	Overall %)	35– 45years (%)	45– 55years (%)	55– 65years n(%)
Verygood	7(23.3)	1(20.0)	4(57.1)	2(11.1)
Good	15(50.0)	3(60.0)	3(42.9)	9(50.0)
Average	8(26.7)	1(20.0)	0(0.0)	7(38.9)
Bad	0(0.0)	0(0.0)	0(0.0)	0(0.0)
Verybad	0(0.0)	0(0.0)	0(0.0)	0(0.0)
Distribution of how many times they eat normally during the past week?				
Variables	Overall	35– 45years(%)	45–55years(%)	55– 65years(%)
More than three meals a day	5(16.7)	0(0.0)	3(42.9)	2(11.1)
Three meals a day	19(63.3)	4(80.0)	3(42.9)	12(66.7)
Two meals a day	4(13.3)	1(20.0)	0(0.0)	3(16.7)
One meal a day	2(6.7)	0(0.0)	1(14.3)	1(5.6)
Less than one meal a day	0(0.0)	0(0.0)	0(0.0)	0(0.0)

The selected samples who had a good appetite were 40%, 57.1%, and 50% among the age groups between 35 and 45 years, 45 and 55 years, and 55 and 65 years, respectively. The selected samples who had average appetite were 20%, 14.3%, and 33.35 among the age groups between 35 and 45 years, 45 and 55 years, and 55 and 65 years, respectively. The selected sample of people who had poor appetite were 40%, 28.6%, and 16.7% among the ages between 35 and 45 years, 45 and 55 years, and 55 and 65 years, respectively. None of the samples had a very poor appetite among the age groups of 35–45 years, 45–55 years, and 55–65 years.

In the age categories between 35 and 45 years old, 45 and 55 years old, and 55 and 65 years old, respectively, the percentage of participants who felt full after consuming the majority of the meal was 40%, 14.3%, and 33.3%. Between the ages of 35 and 45, 45 and 55, and 55 and 65, respectively, 20%, 28.6%, and 27.8% of respondents reported feeling full after consuming half of the meal. None of the samples in groups 1 or 2 reported feeling full after a third of their meals, whereas 22.2% of those in group 3 who were 55 to 65 years old did. Twenty percent of persons and 28.6% of those with diabetes reported feeling full after a few mouthfuls of food, respectively.

The percentages of the sample who said the dish tasted excellent were 20%, 57.1%, and 11.1% for the age groups between 35 and 45, 45 and 55, and 55 and 65, respectively. The percentage of the sample who said the dish tasted well was 60%, 42.9%, and 50%, respectively, for the age groups between 35 and 45, 45 and 55, and 55 and 65. 20%, 38.9%, and 55–65% of the sample's respondents believed that the food had an average flavor, respectively. No sample in any of the groups experienced very unpleasant meal flavor.

In the age groups of 45–55 and 55–65, respectively, 42.9% and 11.1% of the samples reported eating more than three meals per day. The percentages of the samples who typically consume three meals a day were 80%, 4.9%, and 66.7% for people aged 35 to 45, 45 to 55, and 55 to 65, respectively. In the age groups of 35–45 and 55–65, respectively, 20% and 16.7% of the respondents reported eating two meals every day. In the age groups of 45–55 and 55–65, respectively, 14.3% and 5.6% of the samples reported eating one meal a day normally. No sample in any group that typically eats more than one meal.

Table 5(A) Quality of life(QOL)

Variables	Overall N= 30 n(%)	35– 45years N = 5n(%)	45– 55years N = 7n(%)	55– 65years N = 18n(%)
Distribution of need to stay in bed or chair during the day?				
Notat all	15(50.0)	1(20.0)	2(28.6)	11(61.1)
Quitea bit	10(33.3)	2(40.0)	3(42.9)	4(22.2)
Verymuch	5(16.7)	2(40.0)	2(28.6)	3(16.7)
Distribution of needing help with eating, dressing, washing and using the toilet?				
Notat all	15(50.0)	1(20.0)	1(14.3)	13(72.2)
Quitea bit	10(33.3)	3(60.0)	5(71.4)	2(11.1)
Verymuch	5(16.7)	1(20.0)	1(14.3)	3(16.7)
Distribution of limited in doing daily work or other daily activities?				
Notat all	7(23.3)	0(0.0)	1(14.3)	6(33.3)
Quitea bit	18(60.0)	4(80.0)	5(71.4)	9(50.0)
Verymuch	5(16.7)	1(20.0)	1(14.3)	3(16.7)
Distribution of who had shortness of breath of the selected sample?				
Notat all	14(46.7)	1(20.0)	1(14.3)	12(66.7)
Quitea bit	11(36.7)	3(60.0)	5(71.4)	3(16.7)
Verymuch	5(16.7)	1(20.0)	1(14.3)	3(16.7)
Distribution of who had pain during the past week?				
Notat all	21(70.0)	2(40.0)	4(57.1)	15(83.3)
Quitea bit	5(16.7)	2(40.0)	2(28.6)	1(5.6)
Verymuch	4(13.3)	1(20.0)	1(14.3)	2(11.1)
Distribution o f who need forest during the past week?				
Notat all	4(13.3)	1(20.0)	3(42.9)	0(0.0)
Quitea bit	20(66.7)	3(60.0)	2(28.6)	15(83.3)
Verymuch	6(20.0)	1(20.0)	2(28.6)	3(16.7)
Distribution of trouble sleeping during the past week?				
Notat all	17(56.7)	3(60.0)	5(71.4)	9(50.0)
Quitea bit	10(33.3)	1(20.0)	1(14.3)	8(44.4)
Verymuch	6(10.0)	1(20.0)	1(14.3)	1 (5.6)
Distribution of felt weak during the past week?				
Notat all	14(46.7)	2(40.0)	7(100.0)	5(27.8)
Quitea bit	10(33.3)	2(40.0)	0 (0.0)	8(44.4)
Verymuch	6(20.0)	1(20.0)	0(0.0)	5(27.8)

Table 5(B) Quality of life(QOL)

Distribution of felt nauseated during the pastweek?				
Variables	**Overall (%)**	**35– 45years(%)**	**45– 55years (%)**	**55– 65years (%)**
Notat all	19(63.3)	4(80.0)	4(57.1)	11(61.1)
Quitea bit	7(23.3)	1(20.0)	1(14.3)	5(27.8)
Verymuch	4(13.3)	0(0.0)	2(28.6)	2(11.1)
Distribution of felt vomiting during the past week?				
Notat all	19(63.3)	4(80.0)	4(57.1)	11(61.1)
Quitea bit	7(23.3)	1(20.0)	1(14.3)	5(27.8)
Verymuch	4(13.3)	0(0.0)	2(28.6)	2(11.1)
Distribution of constipated during the past week?				
Notat all	18(60.0)	2(40.0)	5(71.4)	11(61.1)
Quitea bit	7(23.3)	2(40.0)	2(28.6)	3(16.7)
Verymuch	5(16.7)	1(20.0)	0(0.0)	4(22.2)
Distribution of who had diarrhea during the past week?				
Notat all	12(40.0)	3(60.0)	2(28.6)	7(38.9)
Quitea bit	14(46.7)	2(40.0)	1(14.3)	11(61.1)
Verymuch	4(13.3)	0(0.0)	4(57.1)	0 (0.0)
Distributions of pain interfere with daily activities during the past week?				
Notat all	20(66.7)	3(60.0)	5(71.1)	12(66.7)
Quitea bit	6(20.0)	2(40.0)	1(14.3)	3(16.7)
Verymuch	4(13.3)	0(0.0)	1(14.3)	3(16.7)
Distribution of having difficulty concentrating on things during the past week?				
Notat all	20(66.7)	3(60.0)	4(57.1)	13(72.2)
Quitea bit	5(16.7)	1(20.0)	2(28.6)	2(11.1)
Verymuch	4(16.7)	1(20.0)	1(14.3)	3(16.7)
Distribution of feel tense during the past week?				
Quitea bit	15(50.0)	3(60.0)	1(14.3)	11(61.1)
Verymuch	0(0.0)	0(0.0)	0(0.0)	0(0.0)
Distribution of worry during the past week?				
Notat all	11(36.7)	2(40.0)	5(71.4)	4(22.2)
Quitea bit	15(50.0)	2(40.0)	1(14.3)	12(66.7)
Verymuch	4(13.3)	1(20.0)	1(14.3)	2(11.1)
Distribution of feel irritable during the past week?				
Notat all	9(30.0)	2(40.0)	4(57.1)	3(16.4)
Quitea bit	15(50.0)	2(40.0)	2(28.6)	11(61.1)
Verymuch	6(20.0)	1(20.0)	1(14.3)	4(22.2)

The quality of life for patients with congestive heart failure is shown in Table 5 (A&B) above. In the age groups of 35–45, 45–55, and 55–65 years old, respectively, the samples who had not at all needed to remain in a bed or chair were 20.0%, 28.6%, and 61.1%. Between the ages of 35 and 45, 45 to 55, and 55 to 65, respectively, 40.0%, 42.9%, and 22.2% of the samples had a lot of need to remain in bed or a chair. In the age groups of 35–45, 45–55, and 55–65, respectively, there were 40.0%, 28.6%, and 16.7% of the sample who very much needed to remain in a bed or chair.

In relation to the distribution of the chosen samples who required assistance with eating, dressing, washing, and using the bathroom. The percentages of the samples who never required assistance with a daily task were 20, 14, and 72.2%. 60.0% of those in the 35–45, 45–55, and 55–65 age groups, respectively. In the age groups of 35–45, 45–55, and 55–65, respectively, 71.1% and 11.1% of the samples needed a lot of assistance with everyday activities. Between the ages of 35 and 45, 45 to 55, and 55 to 65, respectively, 20.0%, 14.3%, and 16.7% of the samples needed significant assistance with everyday tasks.

The percentages of the samples who had no restrictions whatsoever on carrying out regular tasks or activities were 14.3%, 33.3%, and 55-65 years of age, respectively. 80.0%, 71.4%, and 50.0% of the samples in the age groups of 35–45, 45–55, and 55–65 years, respectively, reported significant limitations in performing everyday tasks or activities. 20.0%, 14.3%, and 16.7% of the samples in the age groups of 35–45, 45–55, and 55–65 years, respectively, reported having significant difficulty doing everyday tasks or activities.

The percentages of samples in the age ranges of 35–45, 45–55, and 55–65 who did not experience shortness of breath were 20, 14, 3, and 66.7%, respectively. In the age groups of 35–45, 45–55, and 55–65, respectively, 60.0%, 71.4%, and 16.7% of the samples exhibited significant shortness of breath. The percentages of samples with extremely severe shortness of breath were 20.0%, 14.3%, and 16.7% for the age groups of 35 to 45, 45 to 55, and 55 to 65 years, respectively.

The percentage of samples in the age ranges of 35–45, 45–55, and 55–65 who reported no discomfort in the previous week was 40.0%, 57.1%, and 83.3%, respectively. 40.0%, 28.6%, and 5.6% of the samples in the 35–45, 45–55, and 55–65 age groups, respectively, reported significant pain in the previous week. In the age groups between 35 and 45, 45 to 55, and 55 to 65, respectively, 20.0%, 14.3%, and 11.1% of the sample reported having very significant pain in the previous week.

6.3% of the samples did not experience either nausea or vomiting, while 13.3% of the samples experienced both. 60% of the samples did not experience constipation at all compared to 16.7% of the samples that did. In comparison to 46.7% of the samples, 13.3% of them experienced diarrhea on a regular basis. While pain did not significantly interfere with 66.7% of the selected sample's daily activity, it did significantly interfere with 13.3% of it.

16.7% of the chosen samples had some trouble focusing, whereas 16.7% were completely incapable of doing so. 50% of the chosen samples experienced daytime tension. 50% of the chosen sample expressed some concern about the future. 50% of the chosen group reported feeling a little irritable all day. Compared to 40% of the sample who felt a little gloomy, 20% of the sample was severely depressed. 60% of the chosen samples had no trouble recalling information, compared to 13.3% of samples that had significant trouble recalling information. 36.3% of the sample believed their health was good, while 43.3% said it was good.

Table 6 Total Cachexia Score

Particular	Mean observed CASCO	Norma lRange	p value
35–45years(n=5)	35.80 ± 15.22		
45-55years(n=7)	33.57 ± 13.81	<14 NORMAL	<0.001
55-65years (n=18)	32.17 ± 12.82		

Table no-6 represents the total cachexia score . Group 1's mean cachexia score was 35.80 with a standard deviation of [15.22], Group 2's was 33.57 with a standard deviation of [13.81], and Group 3's was 32.17 with a standard deviation of [12.82]. 14 was the predicted cachexia score, which is regarded as typical. The cachexia scores of every sample that was chosen were all above normal, which was regarded as mild cachexia. Total Cachexia Score's p-value was determined to be statistically significant at 0.001.

According to Matthew A. Carson et al.'s study, "Exploring the prevalence, impact and experience of cardiac cachexia in patients with advanced heart failure and their caregivers" published in 2022, cardiac cachexia is common in people with severe heart failure. As a result, the current study is consistent with earlier research. [14]

4. Conclusion

Cachexia has a significant impact on the morbidity and mortality of individuals with congestive heart failure. A blood test can be performed on patients to determine the prevalence of cardiac cachexia, such as the protein albumin, CRP, even if there is no specific test that can diagnose cardiac cachexia if the patient has lost more than 5% of their body weight in 6 months without attempting. Another indicator of myocardial cachexia is a high level of systemic inflammation. Reduced levels of physical activity in elderly persons with congestive heart failure may be linked to cardiac cachexia. According to the results of the current investigation, individuals with congestive heart failure had a significantly higher prevalence of malnutrition and cardiac cachexia.

A cautious anti-inflammatory diet can aid in reducing and/or preventing progressive tissue wasting in addition to normal dietary intake, including enough protein and other nutritional supplements, an active lifestyle, and frequent exercise. Involving family members and relevant community resources is crucial when counseling older people with congestive heart failure . An essential component of the patient's overall cardiac cachexia treatment strategy should be a high-calorie, high-protein diet, supplements, and regular activity (both physical and mental). Supplements with micronutrients and vitamins are also beneficial, particularly for con heart disease.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

Statement of ethical approval

The present research work does not contain any studies performed on humans subjects by any of the authors'.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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