

Conference subtheme:

Implementing Effective Interventions in Healthcare

Abstract title: A Study on the efficacy of Branched Chain Amino Acids (BCAAs) for the management of Frailty in patients with Liver Cirrhosis

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Introduction: Cirrhosis is the advanced stage of hepatic fibrosis characterized by distortion of liver architecture and regenerative nodules. Patients with cirrhosis are vulnerable to frailty, a syndrome marked by diminished strength, endurance, and physiological function, increasing the risk of physical dependency and death. Frailty develops earlier in individuals with chronic illnesses such as cirrhosis. Branched Chain Amino Acids (BCAAs), including L-valine, leucine, and L-isoleucine, improve muscle strength, ascites, and edema in cirrhotic patients and may help with hepatic encephalopathy.

Objectives: To study the efficacy of BCAA supplementation for managing frailty in cirrhotic patients and to assess the prevalence and degree of frailty in these patients.

Methods: A randomized prospective study was conducted at Amrita Institute of Medical Sciences on 70 Cirrhotic patients (33 in the intervention group receiving BCAAs and 37 in the control group) over one year. Data were collected from patients with Child-Pugh class A, B, and C through medical records and personal interviews. Frailty scores were assessed using the Edmonton Frail Scale, and the impact of BCAA supplementation was analyzed.

Results: Patients aged 61-70 years were most affected, with a mean age of 57.0 ± 11.46 years in the intervention group and 56.57 ± 10.5 years in the control group. Male patients predominated in both groups (87.8% in the intervention group and 83.8% in the control group). Alcoholism and smoking were major risk factors. BCAA therapy led to significant improvements in serum bilirubin ($P=0.001$) and serum albumin ($P=0.001$) levels, as well as frailty scores, in the intervention group compared to the control group.

Conclusions: BCAA supplementation significantly improved frailty scores, serum albumin, and bilirubin levels in cirrhotic patients. Long-term BCAA therapy may improve prognostic markers, reduce mortality risk, and enhance the quality of life in cirrhosis patients.