The Impact of Frailty and Malnutrition on In-hospital Outcomes in Patients with Acute Myocardial Infarction

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BACKGROUND

• The prevalence of malnutrition among all hospitalized patients in the US is estimated to be around 40-54%.
• The separate impacts of malnutrition and frailty on early outcomes after myocardial infarction is not well studied.
• We sought to identify the prevalence and outcomes of diagnosed malnutrition, and compared them to frailty among a contemporary cohort of patients with AMI in the United States.

METHODS

• We queried the National Inpatient Sample (NIS) from January 2012 to September 2015 (26,859,889 hospitalizations).
• A frailty index was constructed if patients had 4 or more of the following conditions: diabetes mellitus, congestive heart failure, chronic lung disease, peripheral vascular disease, depression, fluid & electrolyte disorders, chronic kidney disease, anemia, or unintentional weight loss.
• Using complex survey analysis, multivariable models were used to assess for in-hospital mortality, mechanical circulatory support (MCS) use, cardiogenic shock, acute kidney injury (AKI), and length of stay (LOS).
• Statistical significance for p values was set at < 0.05.
• The Pearson Chi-square test was used to compare categorical variables, while continuous variables were compared with the student’s t test or one-way Analysis of Variance (ANOVA), as appropriate.

RESULTS

• Out of 2,260,425 AMI hospitalizations, 78,095 (3.5%) had diagnosed malnutrition.
• 80,440 (3.6%) had no diagnosis of malnutrition but were frail.
• Malnutrition and frailty were both associated with increased mortality (12.1% vs 7.5 vs 3.9%, P<0.001).
• Malnourished patients were more likely to develop cardiogenic shock, require MCS, and to develop AKI requiring dialysis compared to both frail and well nourished patients.
• Similar, but less severe trends were seen in frail patients.

CONCLUSION

• Malnourished patients hospitalized with AMI have higher rates of in-hospital mortality, cardiogenic shock, MCS use, and AKI requiring dialysis.
• Frail patients also exhibited an increased risk for adverse in-hospital outcomes.
• Identification of frail and malnourished patients early in their hospital course could result in improved outcomes.
• Further studies should evaluate the role of nutritional interventions in malnourished and frail patients with AMI.

REFERENCES