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Association Between Nutritional Status and Disease Activity in Inflammatory Bowel Disease

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Abstract: Acute myocardial infarction (AMI) remains an important cause of in-hospital morbidity and mortality. Early recognition of patients at increased risk of death is essential for appropriate monitoring, timely intervention, and effective allocation of critical care resources. Identification of clinical and laboratory predictors may assist in early risk stratification of patients presenting with AMI.To determine the clinical predictors of in-hospital mortality among patients admitted with acute myocardial infarction.A hospital-based analytical cross-sectional study was conducted among 190 adult patients with confirmed acute myocardial infarction. Patients with STEMI and NSTEMI were included and followed throughout their index hospitalization. Demographic characteristics, cardiovascular risk factors, clinical presentation, hemodynamic parameters, type of AMI, laboratory investigations, left ventricular ejection fraction, and in-hospital complications were recorded using a structured data collection proforma. The primary outcome was in-hospital mortality. Statistical analysis was performed using appropriate tests for comparison of survivors and non-survivors, followed by multivariable binary logistic regression to identify independent predictors of mortality. Adjusted odds ratios (ORs) with 95% confidence intervals (CIs) were calculated, and a p-value <0.05 was considered statistically significant.Among the 190 patients included in the study, 166 (87.4%) survived to hospital discharge, while 24 (12.6%) died during hospitalization. Non-survivors were significantly older and more frequently presented with STEMI, delayed presentation, cardiogenic shock, acute heart failure, reduced left ventricular ejection fraction, renal dysfunction, tachycardia, and systolic hypotension. Cardiogenic shock was strongly associated with mortality

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and remained an independent predictor on multivariable analysis (adjusted OR: 8.92; 95% CI: 2.89–27.52; p<0.001). LVEF <40% (adjusted OR: 5.76; 95% CI: 2.01–16.48; p=0.001), acute heart failure (adjusted OR: 3.84; 95% CI: 1.39–10.62; p=0.009), creatinine >1.5 mg/dL (adjusted OR: 3.21; 95% CI: 1.22–8.45; p=0.018), systolic blood pressure <90 mmHg (adjusted OR: 4.67; 95% CI: 1.55–14.05; p=0.006), and age ≥70 years (adjusted OR: 2.41; 95% CI: 1.01–5.77; p=0.048) were also independently associated with increased mortality.In-hospital mortality among patients with acute myocardial infarction was strongly associated with markers of hemodynamic instability, impaired ventricular function, acute heart failure, renal dysfunction, and advanced age. Cardiogenic shock and reduced LVEF were the strongest independent predictors of mortality. Early identification of these high-risk features may facilitate prompt risk stratification, intensive monitoring, and timely management of patients with AMI.

Key words

Inflammatory bowel disease; Crohn's disease; ulcerative colitis; nutritional status; malnutrition; disease activity; albumin; prognostic nutritional index; geriatric nutritional risk index; micronutrient deficiency.

Introduction

Inflammatory bowel disease (IBD) comprises chronic inflammatory disorders of the gastrointestinal tract, primarily Crohn's disease and ulcerative colitis. The disease course is characterized by periods of active inflammation and remission, with considerable variation in severity, anatomical involvement, complications, and response to treatment. Persistent intestinal inflammation can impair nutritional status through reduced intake, malabsorption, increased metabolic requirements, gastrointestinal losses, and systemic inflammatory effects [1].Nutritional abnormalities are common among patients with IBD. Although undernutrition has traditionally received the greatest attention, patients may also present with overweight, obesity, altered body composition, sarcopenia, or micronutrient deficiencies. The nutritional phenotype can therefore vary considerably between individuals and may change during different stages of disease [2].Crohn's disease is particularly associated with nutritional impairment because inflammation can involve any portion of the gastrointestinal tract and may produce malabsorption, diarrhea, abdominal pain, strictures, fistulas, and reduced oral intake. Patients with extensive small-bowel disease or previous intestinal resection may be especially vulnerable to deficiencies in iron, vitamin B12, folate, vitamin D, and other nutrients [3].Ulcerative colitis can also cause significant nutritional deterioration, particularly during active disease. Frequent diarrhea and gastrointestinal blood loss can contribute to dehydration, iron deficiency, anemia, electrolyte abnormalities, and weight loss. Systemic inflammation further increases metabolic demands and can promote muscle catabolism [4].Inflammation and nutritional impairment are closely interconnected. Active intestinal inflammation can reduce appetite and food intake while simultaneously increasing energy and protein requirements. Cytokine-mediated metabolic changes may promote muscle protein breakdown and alter nutrient metabolism. Consequently, nutritional deterioration can develop even when body weight or body mass index does not initially appear severely abnormal [5].Serum albumin is frequently used as an indicator of nutritional and inflammatory status. However, albumin is a negative acute-phase protein and its concentration decreases during systemic inflammation.

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Therefore, hypoalbuminemia in IBD cannot be interpreted solely as evidence of inadequate protein intake. It may instead reflect the combined effects of inflammation, intestinal protein loss, hydration status, and disease severity [6].Anemia is another important nutritional and clinical manifestation of IBD. Iron deficiency may result from chronic intestinal blood loss, inadequate dietary intake, impaired absorption, or increased requirements. Anemia of chronic disease can occur simultaneously because inflammatory cytokines alter iron metabolism and suppress erythropoiesis. The coexistence of iron deficiency and inflammation can therefore complicate interpretation of laboratory findings [7].Micronutrient deficiencies are also frequent. Vitamin D deficiency, vitamin B12 deficiency, folate deficiency, iron deficiency, and zinc deficiency can occur because of reduced intake, malabsorption, disease location, previous surgery, or chronic intestinal losses. These deficiencies can negatively affect physical function, bone health, immunity, and quality of life [2].The European Society for Clinical Nutrition and Metabolism (ESPEN) recognizes malnutrition as an important complication of IBD, particularly Crohn's disease. Current nutritional guidance recommends systematic nutritional assessment and appropriate management of deficiencies while emphasizing that nutritional therapy should be individualized according to disease phenotype and clinical circumstances [8].Disease activity itself is traditionally evaluated through a combination of symptoms, inflammatory markers, imaging, and endoscopic findings. In Crohn's disease, clinical indices and objective inflammatory measures are used to characterize activity, while ulcerative colitis activity can be assessed using clinical and endoscopic scoring systems. Biomarkers such as C-reactive protein (CRP) and fecal calprotectin provide additional information regarding intestinal inflammation [9].Nutritional status may provide another dimension of disease assessment. A patient with active inflammation may experience progressive weight loss, declining serum albumin, anemia, and other nutritional abnormalities. These findings can therefore signal a higher inflammatory burden even when conventional clinical symptoms are variable.Recent evidence directly supports an association between nutritional indices and IBD activity. A retrospective study involving more than one thousand patients found that prognostic nutritional index (PNI), geriatric nutritional risk index (GNRI), and controlling nutritional status (CONUT) scores independently predicted disease activity. GNRI demonstrated the strongest predictive performance among the three indices, while combining nutritional indices with CRP improved prediction of IBD activity [10].The relationship is clinically important because nutritional status may influence treatment response, hospitalization, postoperative outcomes, infection risk, and quality of life. A large systematic review of nutritional status and disease course in IBD identified associations between nutritional abnormalities and remission, surgery, postoperative recurrence, and treatment-related outcomes [11].Nutritional impairment is therefore not simply a consequence of chronic gastrointestinal disease. It can interact with inflammation and influence the overall clinical trajectory. Malnutrition may reduce physiological reserve and impair recovery, while active inflammation can perpetuate catabolism and nutrient losses.At the same time, nutritional assessment should not be restricted to patients who appear underweight. Obesity and excess adiposity are increasingly observed among patients with IBD, and body weight alone may fail to identify sarcopenia or micronutrient deficiencies. Comprehensive assessment should therefore consider recent weight changes, dietary intake, muscle mass, biochemical markers, disease activity, and specific nutrient deficiencies [2].The present study evaluated the association between nutritional status and disease activity in IBD, with emphasis on anthropometric characteristics, biochemical nutritional indicators, micronutrient deficiencies, and composite nutritional indices. The study also examined the potential role of nutritional assessment as an adjunctive component of disease monitoring.

Materials and Methods

Study Design

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A hospital based analytical cross sectional study was undertaken to find out the clinical determinants of in-hospital mortality in patients presenting with acute myocardial infarction (AMI).

Study Setting

The study was conducted in the Department of Cardiology, Gajju Khan Medical College and Bacha Khan Medical Complex Swabi, Pakistan. The facility offered emergency, coronary care and inpatient cardiac services for patients with acute coronary syndromes.

Study Duration

The study was conducted for a period of 6 months from January 2026 to June 2026 with approval from the institutional ethical review committee.

Study Population

The study population included adult patients admitted to the hospital with a confirmed diagnosis of acute myocardial infarction during the study period. In-hospital mortality was determined by following patients from the date of admission to discharge or death.

Sampling technique and sample size

The study includes 190 patients. Eligible patients were recruited via a sequential sampling method. Patients who met the predefined eligibility criteria during the study period were considered for inclusion until the needed sample size was reached.

Inclusion Criteria

The inclusion criteria were age ≥ 18 years and diagnosis of acute myocardial infarction on the basis of clinical presentation, electrocardiographic findings, and cardiac biomarker findings. Inclusion of patients with ST-segment elevation myocardial infarction (STEMI) and non-ST-segment elevation myocardial infarction (NSTEMI). Patients who gave informed consent as required were also included.

Exclusion Criteria

Patients with unstable angina with no indication of myocardial infarction were eliminated. Also excluded were patients having a prior diagnosis of terminal illness predicted to independently determine short-term survival. Patients were eliminated from final analysis if their medical records lacked key clinical or outcome information.

Data Collection Procedure

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Ethical approval was obtained and eligible patients presenting with acute myocardial infarction were evaluated at the time of admission. The study's objective and methods were explained and informed consent was obtained from eligible participants or their legally authorized representatives as applicable.Demographic variables, cardiovascular risk factors, clinical presentation, investigations, treatment received and in-hospital outcomes were noted using a systematic data collecting proforma. Demographic information includes age and sex. Relevant cardiovascular risk factors included diabetes mellitus, hypertension, smoking, dyslipidemia, obesity and prior ischemic heart disease.Clinical data at presentation comprised duration of symptoms prior to presentation, presenting symptoms, heart rate, systolic and diastolic blood pressure, oxygen saturation and hemodynamic state. Emphasis was put on the existence of cardiogenic shock and abrupt heart failure upon presentation.Electrocardiographic data were recorded, including the type of myocardial infarction and anatomical location of infarction when applicable. Patients were classed as having a STEMI or an NSTEMI.Laboratory tests included cardiac biomarkers, hemoglobin, serum creatinine, blood glucose, lipid profile and other frequently done investigations which were thought to be clinically relevant. Review of the echocardiographic assessment of the left ventricular systolic performance and the left ventricular ejection fraction.Data on acute treatments were also documented, including reperfusion therapy, percutaneous coronary intervention, thrombolytic therapy where applicable, antiplatelet therapy, anticoagulation and other guideline-directed medical therapy.

Patients were followed during hospitalization for the development of problems. These included cardiogenic shock, acute heart failure, clinically significant arrhythmias, recurrent myocardial infarction, cardiac arrest and other serious cardiovascular problems.

Evaluation of in-hospital mortality

The primary outcome was mortality in hospital. In-hospital mortality was defined as death at any point during the index hospitalization, from hospital admission to discharge. Survivors were defined as patients alive at index hospitalization. Non-survivors were defined as patients who died during hospitalization.

Variables of Study

The dependent variable was in-hospital mortality defined as death or survival during the index stay.

Independent variables were age, gender, diabetes mellitus, hypertension, smoking status, dyslipidemia, history of ischemic heart disease, duration of symptoms before presentation, STEMI/NSTEMI status, systolic blood pressure, heart rate, cardiogenic shock, acute heart failure, left ventricular ejection fraction, serum creatinine, blood glucose, and major in-hospital complications.

Statistical Analysis

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Data entry and analysis were done by IBM SPSS Statistics version 26.0. Continuous variables were tested for normality and are presented as mean ± standard deviation or median and interquartile range, as applicable. Frequencies and percentages are used to present categorical variables.Patients were split into two groups based on their in-hospital outcome: survivors and non-survivors. Comparison of continuous variables was performed using independent-samples t-test or Mann–Whitney U test according to the distribution of data. Categorical variables were compared using Chi-square test or Fisher's exact test (where appropriate).First, univariate analysis was performed to evaluate the connection between individual demographic and clinical factors and in-hospital mortality. Variables with a clinically relevant connection or p value <0.20 on univariate analysis were selected for multivariable logistic regression.Then multivariable binary logistic regression model was designed to find the independent determinants of in-hospital mortality after adjusting for the relevant confounding factors. Adjusted odds ratios (AORs) with 95% confidence intervals (CIs) were estimated. Two-tailed p-value <0.05 was considered statistically significant.

Ethical Considerations

The study was approved by the Institutional Review Board/Ethical Committee of the institution where the study was conducted. The study was conducted in conformity with recognized ethical principles for research with human subjects.Eligible participants or their authorized representatives, where appropriate, provided written informed consent. Participation was voluntary and patients or their representatives were notified that failure to participate would not influence medical care given.Study was performed in accordance with patient confidentiality. In addition, identities were replaced with unique study identification numbers, and information collected from medical records was used only for research purposes. The final research report did not include any personal identifiers.

Results

A total of 190 patients with confirmed acute myocardial infarction (AMI) were included in the study. Patients were followed throughout their index hospitalization and categorized according to their outcome as survivors or non-survivors. The overall in-hospital mortality was assessed in relation to demographic characteristics, cardiovascular risk factors, clinical presentation, hemodynamic status, laboratory findings, left ventricular function, and in-hospital complications.

Table 1. Baseline demographic and clinical characteristics of patients with acute myocardial infarction (n=190)

Variable	Frequency (n)	Percentage (%)
Age group		
<50 years	35	18.4

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Variable	Frequency (n)	Percentage (%)
50–59 years	47	24.7
60–69 years	57	30.0
≥70 years	51	26.8
Sex		
Male	126	66.3
Female	64	33.7
Diabetes mellitus	72	37.9
Hypertension	94	49.5
Smoking	81	42.6
Dyslipidemia	69	36.3
Previous ischemic heart disease	54	28.4
Type of AMI		
STEMI	111	58.4
NSTEMI	79	41.6
Delayed presentation (>12 hours)	63	33.2
Cardiogenic shock at admission	22	11.6
Acute heart failure	47	24.7
LVEF <40%	58	30.5

The mean age of the study population was approximately 62 years. Male patients constituted the majority of the study population. Diabetes mellitus, hypertension, smoking, and dyslipidemia were common cardiovascular risk factors. STEMI represented the more frequent type of AMI. Approximately one-third of patients presented after more than 12 hours of symptom onset.

Table 2. Comparison of clinical characteristics between survivors and non-survivors

Variable	Survivors (n=166)	Non-survivors (n=24)	p-value
Age, mean ± SD (years)	60.4 ± 11.8	71.2 ± 10.3	<0.001
Male sex, n (%)	111 (66.9)	15 (62.5)	0.677
Diabetes mellitus, n (%)	59 (35.5)	13 (54.2)	0.086
Hypertension, n (%)	79 (47.6)	15 (62.5)	0.184
Smoking, n (%)	73 (44.0)	8 (33.3)	0.326
Dyslipidemia, n (%)	63 (38.0)	6 (25.0)	0.235
Previous IHD, n (%)	44 (26.5)	10 (41.7)	0.129
STEMI, n (%)	92 (55.4)	19 (79.2)	0.029

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Variable	Survivors (n=166)	Non-survivors (n=24)	p-value
Delayed presentation, n (%)	50 (30.1)	13 (54.2)	0.021
Cardiogenic shock, n (%)	10 (6.0)	12 (50.0)	<0.001
Acute heart failure, n (%)	32 (19.3)	15 (62.5)	<0.001
LVEF <40%, n (%)	39 (23.5)	19 (79.2)	<0.001
Serum creatinine >1.5 mg/dL, n (%)	27 (16.3)	12 (50.0)	<0.001
Heart rate >100 bpm, n (%)	35 (21.1)	11 (45.8)	0.009
Systolic BP <90 mmHg, n (%)	13 (7.8)	13 (54.2)	<0.001

Of the 190 patients, 166 survived to hospital discharge, whereas 24 patients died during hospitalization, corresponding to an overall in-hospital mortality of **12.6%**.Non-survivors were significantly older than survivors. STEMI, delayed presentation, cardiogenic shock, acute heart failure, reduced left ventricular ejection fraction, elevated serum creatinine, tachycardia, and hypotension were more frequently observed among non-survivors.

Table 3. In-hospital complications according to patient outcome

In-hospital complication	Survivors (n=166)	Non-survivors (n=24)	p-value
Cardiogenic shock	10 (6.0%)	12 (50.0%)	<0.001
Acute heart failure	32 (19.3%)	15 (62.5%)	<0.001
Significant arrhythmia	21 (12.7%)	9 (37.5%)	0.002
Cardiac arrest	4 (2.4%)	8 (33.3%)	<0.001
Recurrent myocardial infarction	5 (3.0%)	3 (12.5%)	0.048

Major in-hospital complications were substantially more common among patients who died. Cardiogenic shock and acute heart failure demonstrated particularly strong associations with mortality. Cardiac arrest was also significantly more frequent among non-survivors.

Table 4. Univariate predictors of in-hospital mortality

Predictor	Odds Ratio (OR)	95% CI	p-value
Age ≥70 years	3.14	1.34–7.35	0.009
Female sex	1.18	0.50–2.79	0.706
Diabetes mellitus	2.14	0.91–5.02	0.081
Hypertension	1.83	0.78–4.29	0.165
Previous IHD	1.98	0.82–4.78	0.128
STEMI	3.06	1.15–8.15	0.026

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Predictor	Odds Ratio (OR)	95% CI	p-value
Delayed presentation	2.74	1.15–6.52	0.023
Cardiogenic shock	15.67	5.67–43.31	<0.001
Acute heart failure	6.96	2.76–17.55	<0.001
LVEF <40%	12.44	4.38–35.33	<0.001
Creatinine >1.5 mg/dL	5.13	2.08–12.66	<0.001
Heart rate >100 bpm	3.17	1.28–7.85	0.012
Systolic BP <90 mmHg	13.82	5.17–36.93	<0.001

On univariate analysis, advanced age, STEMI, delayed presentation, cardiogenic shock, acute heart failure, reduced LVEF, renal dysfunction, tachycardia, and hypotension were associated with increased odds of in-hospital mortality.

Table 5. Multivariable logistic regression analysis of independent predictors of in-hospital mortality

Independent predictor	Adjusted OR	95% CI	p-value
Age ≥70 years	2.41	1.01–5.77	0.048
STEMI	2.36	0.86–6.48	0.094
Delayed presentation	2.17	0.87–5.42	0.097
Cardiogenic shock	8.92	2.89–27.52	<0.001
Acute heart failure	3.84	1.39–10.62	0.009
LVEF <40%	5.76	2.01–16.48	0.001
Creatinine >1.5 mg/dL	3.21	1.22–8.45	0.018
Systolic BP <90 mmHg	4.67	1.55–14.05	0.006

Multivariable logistic regression demonstrated that cardiogenic shock, LVEF <40%, acute heart failure, elevated serum creatinine, systolic hypotension, and age ≥70 years remained independently associated with in-hospital mortality. Among these factors, cardiogenic shock showed the strongest independent association with mortality.

Discussion

The present study was conducted to identify the clinical and demographic characteristics related with in-hospital mortality in 190 patients with acute myocardial infarction (AMI). In the current analysis, 24 individuals (12.6%) died in hospital and 166 (87.4%) survived to discharge. Death was specifically related with advanced age, STEMI presentation, late hospital admission, hemodynamic instability, reduced left ventricular systolic function, renal failure, and significant in-hospital complications. Multivariable analysis showed that independent predictors of mortality

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were cardiogenic shock, low left ventricular ejection fraction (LVEF), acute heart failure, high serum creatinine, systolic hypotension and advanced age.In the present investigation, death was strongly linked with advanced age. Patients >=70 years had higher risks of death during the hospitalization than younger patients, and this link was maintained after accounting for other clinical factors. Older patients with AMI often have a larger load of cardiovascular comorbidities, less physiological reserve and higher risk of complications, which could negatively influence short-term results. Age consequently remains a significant element of early risk assessment in individuals presenting with AMI.The study also showed a higher proportion of STEMI in non-survivors compared to survivors. STEMI was related with mortality on univariate analysis but this was decreased on adjustment for other variables. This observation shows that the increased mortality associated with STEMI may be, at least in part, a reflection of the greater severity of presentation and development of comorbidities such as shock and severe heart failure. Although the distinction between STEMI and NSTEMI remains clinically relevant, the patient's hemodynamic state and the degree of myocardial dysfunction may add to the prognostic value of infarction alone."Another significant finding was delayed presentation. More than one-third of patients presented >12 hours after symptom onset and delayed presentation was more common in non-survivors. Late presentation may be related to a larger amount of myocardial necrosis and hence with more severe ventricular dysfunction and consequences. The extended ischemia period may be attributable to delays in seeking care, transportation, insufficient knowledge of AMI symptoms, and delays within the healthcare system. These findings underscore the necessity of early diagnosis of AMI symptoms and timely access to reperfusion and definitive cardiac treatment.Cardiogenic shock was the variable most associated with in-hospital death among all the clinical factors evaluated. Cardiogenic shock was observed in 50.0% of the non-survivors and just 6.0% of the survivors. After accounting for other covariates, patients with cardiogenic shock had significantly higher odds of in-hospital death. Additionally, cardiogenic shock is the most severe complication of AMI, which means a substantial reduction of cardiac output and systemic perfusion. The substantial correlation with mortality seen in this study emphasizes the necessity of prompt detection and aggressive hemodynamic stabilization as well as appropriate reperfusion and critical care.Death was also substantially related with acute heart failure. Acute heart failure was seen in over two-thirds of the non-survivors compared to fewer than one-fifth of the survivors. The independent association seen in multivariable analysis suggests that acute ventricular dysfunction resulting in congestion or reduced forward flow contributes substantially to unfavorable short-term outcomes. Hence, patients with clinical indications of heart failure should be considered high-risk and require vigilant monitoring and early therapy of triggering causes.Another important independent predictor was reduced LVEF. Patients with an LVEF < 40 % reported significantly higher mortality than those with intact or mildly impaired systolic function. The connection remained robust after accounting for other clinical variables. LVEF is an objective measure of left ventricular systolic function and may reflect the extent of myocardial injury and the ability of the heart to maintain sufficient circulation after infarction. Assessment of ventricular function can, therefore, provide a considerable contribution to early prognostic classification in patients with AMI.Renal impairment (serum creatinine >1.5 mg/dL)

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was also independently related with mortality. Renal impairment may be associated with significant cardiovascular disease. It might complicate the management of AMI through altered fluid balance, increased vulnerability to electrolyte disturbances and limitations in the use of certain pharmacological or invasive therapies. In critically unwell individuals, an elevated creatinine may also be a sign of systemic hypoperfusion. Renal function should therefore be taken into account at the time of the first evaluation and follow-up of AMI patients.Hypotension was highly related with mortality in the present study. A systolic BP < 90 mmHg was far more common in non-survivors and it was an independent predictor in the multivariable model. Low systolic blood pressure, particularly when used in conjunction with cardiogenic shock, might be indicative of inadequate cardiac output and significant myocardial dysfunction. This finding supports the predictive value of early hemodynamic evaluation in AMI.The present investigation also indicated that substantial in-hospital problems were significantly more frequent in the patients who died. Cardiac arrest, severe arrhythmias, recurrent myocardial infarction, cardiogenic shock and acute heart failure were more common in non-survivors. These issues may be both results of significant cardiac injury, as well as mechanisms directly contributing to death. Therefore, continuous cardiac monitoring and early detection of clinical worsening are especially crucial in high-risk AMI patients.In general, the results suggest that death following AMI is more dictated by the severity of the acute clinical illness than by cardiovascular risk factors alone. Some non-survivors had greater diabetes, hypertension, prior ischemic heart disease and other risk factors but the correlations were less consistent after correction. Conversely, cardiogenic shock, decreased LVEF, acute heart failure, hypotension and renal impairment were strong independent predictors. This trend shows that early assessment of hemodynamic condition, cardiac function, renal function and acute complications may have more prognostic significance in the short term during hospitalization.These results have practical consequences for clinical care. Close monitoring is required for individuals at high risk, such as those with advanced age, delayed presentation, hypotension, cardiogenic shock, acute heart failure, decreased LVEF or renal impairment. Early reperfusion where necessary, adequate pharmacologic therapy, management of comorbidities, and prompt escalation to intensive cardiac care may be of special importance in these individuals.

Conclusion

The study found that in-hospital mortality after acute myocardial infarction was mostly related to indications of severe clinical and cardiac dysfunction. Among 190 assessed patients, death was greater among patients with advanced age, STEMI presentation, delayed arrival to hospital, hemodynamic instability, renal failure, and significant cardiac problems.In multivariable analysis, independent predictors for in-hospital mortality were LVEF <40%, cardiogenic shock, acute heart failure, systolic hypotension, increased blood creatinine and age ≥70 years. Cardiogenic shock was most strongly associated with unfavorable outcome.These results emphasize the necessity of early identification of high-risk AMI patients. Early assessment of hemodynamic condition, cardiac function, renal function, and comorbidities, in addition to early reperfusion

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and appropriate intensive care, may enhance risk categorization and perhaps reduce in-hospital mortality.

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