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Original Research Article

ANALYSIS OF PATTERN OF PATIENTS ADMITTED TO INTENSIVE CARE: AN INSTITUTIONAL BASED STUDY

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ABSTRACT

Background: Intensive care plays a central role in the management of critically ill patients, especially those requiring advanced airway, respiratory, and hemodynamic support. Hence; the present study was conducted to analyze pattern of patients admitted to intensive care.
Materials and Methods: A total of 200 patients admitted during the study period were included based on specific eligibility criteria. Data collection was facilitated using a structured questionnaire designed to capture comprehensive information, including socio-demographic details, reasons for ICU admission, sources of referral, and clinical outcomes. Patient information was systematically gathered through chart reviews and documented medical records. The collected data were thoroughly cleaned, coded, and entered into the Statistical Package for the Social Sciences (SPSS) software for analysis.
Results: A total of 200 patients were evaluated. 66 percent of the patients belonged to the age group of more than 50 years. 71 percent of the patients were males while 59 percent were of rural residence. Source of admission to ICU was medical ward in 50.5 percent followed by emergency department (32 percent), surgical ward (16.5 percent) and gynaecology ward (1 percent). Myocardial infarction was the most common diagnosis followed by Congestive heart failure and Acute respiratory distress syndrome. Other specific diagnosis included Septic shock, Diabetic ketoacidosis, stroke and pneumonia.
Conclusion: Assessing the pattern of patients admitted to intensive care units (ICUs) is essential for optimizing resource allocation, guiding clinical decision-making, and improving patient outcomes. Ultimately, such assessments contribute to reducing ICU mortality and enhancing the overall efficiency and responsiveness of healthcare systems.
Key words: Intensive Care Unit, Critically Ill, Myocardial Infarction.

INTRODUCTION

Since their introduction over fifty years ago, intensive care units (ICUs) have become a vital component of healthcare, predominantly in high-income nations but increasingly present in low- and middle-income countries.

An ICU is defined as a structured system dedicated to delivering specialized care for critically ill patients, offering advanced monitoring and multiple forms of organ support during life-threatening conditions. Although physically located within a hospital, ICU services often extend into other departments such as the emergency room and post-discharge clinics. The classification includes Level 1 ICUs, which offer oxygen and non-invasive monitoring with enhanced nursing care; Level 2 ICUs, which provide invasive monitoring and short-term life support; and Level 3 ICUs, which deliver comprehensive critical care, act as referral centers, and contribute to research and education. This standardized framework helps guide healthcare planning, resource allocation, and quality benchmarking for critical care services.[1-3]

Intensive care plays a central role in the management of critically ill patients, especially those requiring advanced airway, respiratory, and hemodynamic support. These patients are typically admitted to the ICU, where they receive specialized treatment along

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with invasive and non-invasive monitoring to improve clinical outcomes.[4]

Ensuring access to critical care services is vital for reducing morbidity and mortality, and ICU-related deaths place a significant financial strain on national healthcare systems. The WHO surgical care referral manual emphasizes that hospitals should be equipped with ICU facilities capable of supporting surgical interventions.[5]

While timely and appropriate interventions are essential for favorable outcomes, the effectiveness of critical care is often compromised in low-resource settings.[6] Hence; the present study was conducted to analyze pattern of patients admitted to intensive care.

MATERIALS AND METHODS

A total of 200 patients admitted during the study period were included based on specific eligibility criteria. Data collection was facilitated using a structured questionnaire designed to capture comprehensive information, including socio-demographic details, reasons for ICU admission, sources of referral, and clinical outcomes.

Patient information was systematically gathered through chart reviews and documented medical records. The collected data were thoroughly cleaned, coded, and entered into the Statistical Package for the Social Sciences (SPSS) software for analysis. Descriptive statistical methods such as frequencies, percentages, and mean values were used to summarize and interpret the dataset, providing insights into ICU admission trends and outcomes.

RESULTS

A total of 200 patients were evaluated. 66 percent of the patients belonged to the age group of more than 50 years. 71 percent of the patients were males while 59 percent were of rural residence. Source of admission to ICU was medical ward in 50.5 percent followed by emergency department (32 percent), surgical ward (16.5 percent) and gynaecology ward (1 percent). Category of admission was emergency medical patients and emergency surgical patients found to be present in 90.5 percent and 9 percent of the patients respectively. ICU admission was first admission in 87.5 percent of the patients. Myocardial infarction was the most common diagnosis followed by Congestive heart failure and Acute respiratory distress syndrome. Other specific diagnosis included Septic shock, Diabetic ketoacidosis, stroke and pneumonia.
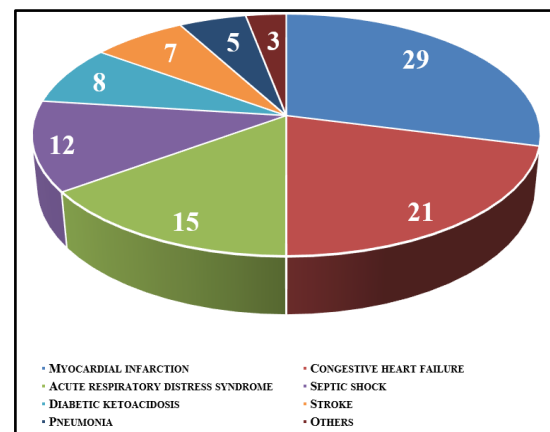
Graph 1: Specific diagnosis

Table 1: Demographic data

Variable		Number	Percentage
Age group (years)	Less than 50	68	34
	More than 50	132	66
Gender	Male	142	71
	Female	58	29
Residence	Rural	118	59
	Urban	82	41

Table 2: Admission details

Admission details		Number	Percentage
Source of admission	Medical ward	101	50.5
	Emergency department	64	32
	Surgical ward	33	16.5
	Gynaecology and obstetrics	2	1
Category of admission	Emergency medical patients	181	90.5
	Emergency surgical patients	18	9
	Elective surgical patients	1	0.5
Frequency of admission	First admission	175	87.5
	Readmission	25	12.5

DISCUSSION

Critical illness affects not only patients but also their families. Research indicates that extended ICU stays are linked to long-term physical, cognitive, psychological, and emotional complications in survivors, collectively known as Post-ICU Syndrome. During the ICU stay, decision-making is frequently shared with the patient's family members, which can heighten their anxiety and risk of depression due to the emotional burden of a loved

one's critical condition. Intensive care represents a continuous spectrum of medical support for patients admitted from various sources, requiring close monitoring of vital signs, invasive hemodynamic assessment, intravenous therapies, fluid balance management, ventilatory assistance, and nutritional support to ensure optimal outcomes. As a vital component of healthcare systems, ICU admission for critically ill patients is essential to minimize morbidity and mortality. Globally, ICU mortality remains a significant concern and varies based on infrastructure, staffing, training, and the nature of admissions. Mortality rates are relatively lower in developed regions—9.3% in North America, 10.3% in Oceania, 13.7% in Asia, and 18.7% in Europe—compared to higher rates observed in South America (21.7%) and the Middle East (26.2%).[7-9] Hence; the present study was conducted to analyze pattern of patients admitted to intensive care.

A total of 200 patients were evaluated. 66 percent of the patients belonged to the age group of more than 50 years. 71 percent of the patients were males while 59 percent were of rural residence. Source of admission to ICU was medical ward in 50.5 percent followed by emergency department (32 percent), surgical ward (16.5 percent) and gynaecology ward (1 percent). Tesema HG et al determined the admission patterns, clinical outcomes and associated factors among patients admitted medical intensive care unit (MICU). A total of 738 patients were admitted to medical intensive care unit (MICU). Five hundred and four patients (68%) of all intensive care unit (ICU) admissions had complete data. Out of the 504 patients, 268 (53.2%) patients were females. Cardiovascular disease 182(36.1%) was the commonest categorical admission diagnosis. The overall mortality rate was 38.7%. In the multivariate analysis, mortality was associated with need for mechanical ventilation and abnormal mental status at admission. Patients who had stay less than four days in MICU were 5 times more likely to die than those who has stay longer time. The overall mortality was considerably high and cardiovascular diseases were the most common cause of admission in MICU.[10]

In the present study, category of admission was emergency medical patients and emergency surgical patients found to be present in 90.5 percent and 9 percent of the patients respectively. ICU admission was first admission in 87.5 percent of the patients. Myocardial infarction was the most common diagnosis followed by Congestive heart failure and Acute respiratory distress syndrome. Other specific diagnosis included Septic shock, Diabetic ketoacidosis, stroke and pneumonia. Barfod C et al, in a previous study, quantified the association between the main component of the Hillerød Acute Process Triage (HAPT) system and the outcome measures; Admission to Intensive Care Unit (ICU) and in-hospital mortality, and identified the vital signs, scored and categorized at admission, that are most strongly associated with the outcome measures. The covariates, T(vitals), T(complaint) and T(final)

were all significantly associated with ICU admission and in-hospital mortality, the odds increasing with the urgency of the triage category. The vital signs best predicting in-hospital mortality were saturation of peripheral oxygen (SpO(2)), respiratory rate (RR), systolic blood pressure (BP) and Glasgow Coma Score (GCS). Not only the type, but also the number of abnormal vital signs, were predictive for adverse outcome. The presenting complaints associated with the highest in-hospital mortality were 'dyspnoea' (11.5%) and 'altered level of consciousness' (10.6%). More than half of the patients had a T(complaint) more urgent than T(vitals), the opposite was true in just 6% of the patients.[11]

Parasher V et al examine pattern of admission and clinical outcome of patients admitted in the pediatric intensive care unit of a rural tertiary health care centre. Information retrieved included age, sex, diagnosis, outcome, morbidity and mortality profile of patients admitted in the last five years. A total of 2810 patients were admitted. (1444) 51.3% were infants, and (1366) 48.6% patients aged 1-18 years. Their ages ranged from one month to 18 years, with the mean age being 40.01 ± 45.79 months. There were 1948 (69.3%) male and 862 (30.3%) female patients giving an M: F ratio of 2.27:1. The overall mortality rate was 2.4%.[12]

CONCLUSION

Analyzing the pattern of patients admitted to intensive care units (ICUs) is essential for optimizing resource allocation, guiding clinical decision-making, and improving patient outcomes. It helps identify prevalent conditions, high-risk populations, and the burden of critical illness, thereby enabling evidence-based planning and policy development. Ultimately, such assessments contribute to reducing ICU mortality and enhancing the overall efficiency and responsiveness of healthcare systems

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