

# PREDICTORS OF MORTALITY AMONG PEDIATRIC CANCER PATIENTS ADMITTED AT THE PEDIATRIC INTENSIVE CARE UNIT OF A TERTIARY CHILDREN'S HOSPITAL

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## BACKGROUND

Children with cancer are not routinely admitted in the PICU in resource-limited settings due to their high morbidity and mortality. Identifying factors that predict mortality will aid in risk-stratification and selection of patients who will benefit most from ICU admission.

## OBJECTIVE OF THE STUDY

To identify predictors of mortality among pediatric cancer patients admitted in the PICU of a tertiary children's hospital from 2017 to 2019

## METHODOLOGY

A retrospective, analytical, cohort study on critically ill pediatric cancer patients admitted in a tertiary hospital's PICU was conducted by chart review. Data collected included age, sex, diagnosis, cancer status, treatment phase, Pediatric Risk of Mortality III score, novel cancer

mortality risk score, presence of sepsis, organ failure and therapeutic interventions. Odds ratio and binary logistic regression were computed to determine significant predictors for mortality.

## RESULTS AND DISCUSSION

Ninety-four PICU admissions were reviewed. Median age was 88.5 months, male-to-female ratio of 1:0.88 with 72% having normal nutritional status.

Main reason for admission was respiratory failure (31.9%) and median length of PICU stay was 5 days. Mortality rate was 38.2%. Most were newly diagnosed patients (38.3%) on intensive phase of treatment (39.4%).

Multivariate analysis showed that a high PRISM III score, need for mechanical ventilation, and inotrope requirement were associated with mortality.

Parameters	Adjusted Odds ratio	95% CI	p-value
PRISM Score	1.2245	1.0623 to 1.4115	0.005
Mechanical ventilation	31.1236	5.4372 to 178.16	<0.001
Inotropes	0.0013	0.00009 to 0.194	0.009
Number of inotropes	160.09	4.0324 to 6355.3	0.007

## CONCLUSIONS AND RECOMMENDATIONS

Close monitoring and early surveillance of patients at risk for shock, respiratory compromise or organ failure may improve outcomes. Early recognition of organ failure and shock with aggressive management through early referral and PICU admission may benefit these patients.

**Keywords:** pediatric cancer, PICU, outcome