Predicting Intensive Care Admission after Radical Surgery for Malignant Pleural Mesothelioma

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Background

Radical surgery in the form of extended pleurectomy decortication (EPD) presents a major physiological stressor to patients undergoing treatment for malignant pleural mesothelioma (MPM).

Identification of factors associated with admission to ICU after EPD can help improve perioperative decision making, inform conversations around consent, and guide resource allocation.

Objectives

We sought to identify patient, oncological and procedural characteristics predictive of critical care admission in this cohort.

Methods

All patients who underwent EPD for MPM between January 2019 and September 2021 were included in final analysis.

Data was collected from operative databases, electronic patient records and the national ICNARC dataset. Statistical analysis was performed using RStudio.

Take Home Messages

1. Admission to ICU following EPD for MPM is common and associated with **male gender** and a **higher requirement for intraoperative red cell transfusion**.
2. Further understanding of factors predisposing to the need for perioperative organ support may identify new opportunities for **prehabilitation, risk stratification and improved resource allocation.**

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Results

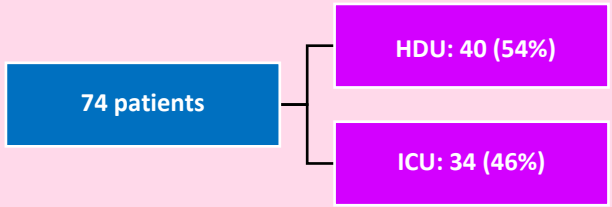

TABLE 1. BASELINE CHARACTERISTICS	ICU (N=34)	WARD (N=40)	P- VALUE
AGE, MEAN (SD)	70.4 (6.5)	69.8 (6.7)	0.377
MALE, % (N)	**88.5 (31)**	**72.5 (29)**	**0.041**
RIGHT SIDED, % (N)	62.8 (22)	52.5 (21)	0.280
EPITHELIOID, % (N)	88.2 (30)	92.5 (37)	0.390
T STAGE 3 OR 4, % (N)	88.2 (30)	70 (28)	0.057
COMORBIDITY SCORE, MEDIAN (IQR)	5 (1)	5(1)	1.000
OP.TIME, MEDIAN (IQR)	4hr03min (1hr31min)	4hr10 (1hr37min)	1.000
DIAPHRAGM PATCH, % (N)	88.2 (30)	75 (30)	0.147
PERICARDIAL PATCH, % (N)	88.2 (30)	82.5 (33)	0.489
INTRAOP RBCS UNITS, MEDIAN (IQR)	**2.8 (2)**	**1.2 (2)**	**<0.001**

32/34 (94%) of patients admitted to ICU following surgery required vasopressor support. In 28/32 (88%) of patients, this was a single agent. In 4/32 (12%) patients, this was by two agents.

6/34 (18%) of patients required advanced respiratory support and 1/34 (3%) required advanced renal support.

Median length of index ICU stay was 3 days (range 1-7). There was no ICU mortality on index admission.