

POSTER PRESENTATION

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Brain death and potential organ donors in neurocritical care mortality

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Introduction

Neurocritical care mortality has potential for organ donation due to brain death.

Objectives

The aim of this study was to analyse the neurocritical care mortality rate and potential brain-dead organ donors.

Methods

We performed an analysis of a 10-year prospective observational cohort database of 6138 patients (58.2% of males, mean: age 55.9 ± 14.7 years, body weight 78.3 ± 15.6 kg, body mass index 26.9 ± 4.7 , NICU stay 3.8 ± 5.3 days, Acute Physiology and Chronic Health Evaluation II score on admission 10.63 ± 5.2) admitted to a single adult neurointensive care unit (NICU). There were 3462 (56.4%) patients (pts) with brain disease (stroke 43.2%, tumour 31.1%, trauma 13.6%, epilepsy 3.8%, hydrocephalus 3.4%, infection 2.5%, others 2.2%), 10.3% of pts had internal carotid artery stenosis (ACI), 32.6% of pts had spine diseases and 0.7% of pts had other disorders. Mean Glasgow Coma Scale on admission was 13.79 ± 2.51 and Glasgow Outcome scale upon discharge from NICU 3.97 ± 1.13 .

Results

From 6138 admitted patients there were 159 (2.6%) cases of NICU mortality with mean length of stay 9.21 ± 10.2 . We found no differences in gender ($p = 0.804$), but mortality rate was significantly higher in acute admissions ($p < 0.001$), primary admissions and secondary to 24 hours than secondary after 24 hours ($p < 0.001$). Comparing the diagnoses, there was a significantly higher mortality rate in pts with brain diseases (95.6% of deceased pts, $p < 0.001$) than in ACI (0.6%), spine (1.9%) and from others (1.9%).

From brain diseases there was significantly higher mortality in stroke pts (67.1%) than in trauma (17.8%), tumour (10.5%), hydrocephalus (2%), infection (2%) and epilepsy (0.7%). There were 23 (14.5%) pts with clinical signs of brain death, of which 13 (56.5%) became organ donors. Main reason of non-harvesting donors was hemodynamic instability (16.7%) and family reluctance (12.5%).

Conclusions

The results of our prospective databases showed that brain damage is the most common cause of mortality in neurointensive care; however there was a low proportion of clinical sign of brain death and not all potential donors were harvested.

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