

Acute Neurological Complications in Pediatric Patients Undergoing Extracorporeal Membrane Oxygenation (ECMO) Treatment at a Tertiary Level Hospital in Buenos Aires, Argentina.

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Introduction

ECMO is a treatment used in critically ill patients who do not respond to conventional mechanical ventilation. While ECMO can be an effective option for cardiopulmonary support, it is also associated with various complications, including severe neurological complications that increase morbidity and mortality, such as ischemic stroke (IS), cerebral venous thrombosis (CVT), intraparenchymal hemorrhage (IPH), hypoxic-ischemic encephalopathy (HIE), posterior reversible encephalopathy syndrome (PRES), seizures, and brain death (BD).

Objective: describe the prevalence of neurological complications in pediatric patients undergoing ECMO treatment at a tertiary level hospital in Buenos Aires

Methods: Retrospective cohort study of pediatric patients undergoing ECMO treatment at a tertiary level hospital in Buenos Aires, from September 1, 2011, to October 1, 2023.

Table 1. Baseline Demographic Characteristics and Indications for ECMO	
Variable	Value (58)
Males (n) (%)	30 (51%)
Age (months)	22 (1-218)
ECMO indication (n) (%)	
Cardiovascular support	45 (78%)
Respiratory Failure	11 (19%)
Sepsis	2 (3%)
CPR previous	9 (15%)
Venovenous ECMO	7 (13%)
Venoarterial ECMO	51 (87%)
Requirement for inotropic drugs	44 (75%)
Previous surgeries	
1	9 (15%)
2	6 (10%)
3	1 (2%)
Median days on ECMO	10 (1-43)
Median days from ECMO admission to symptom onset	6 (1-43)

Figure 1: Summarized findings of acute neurological symptoms

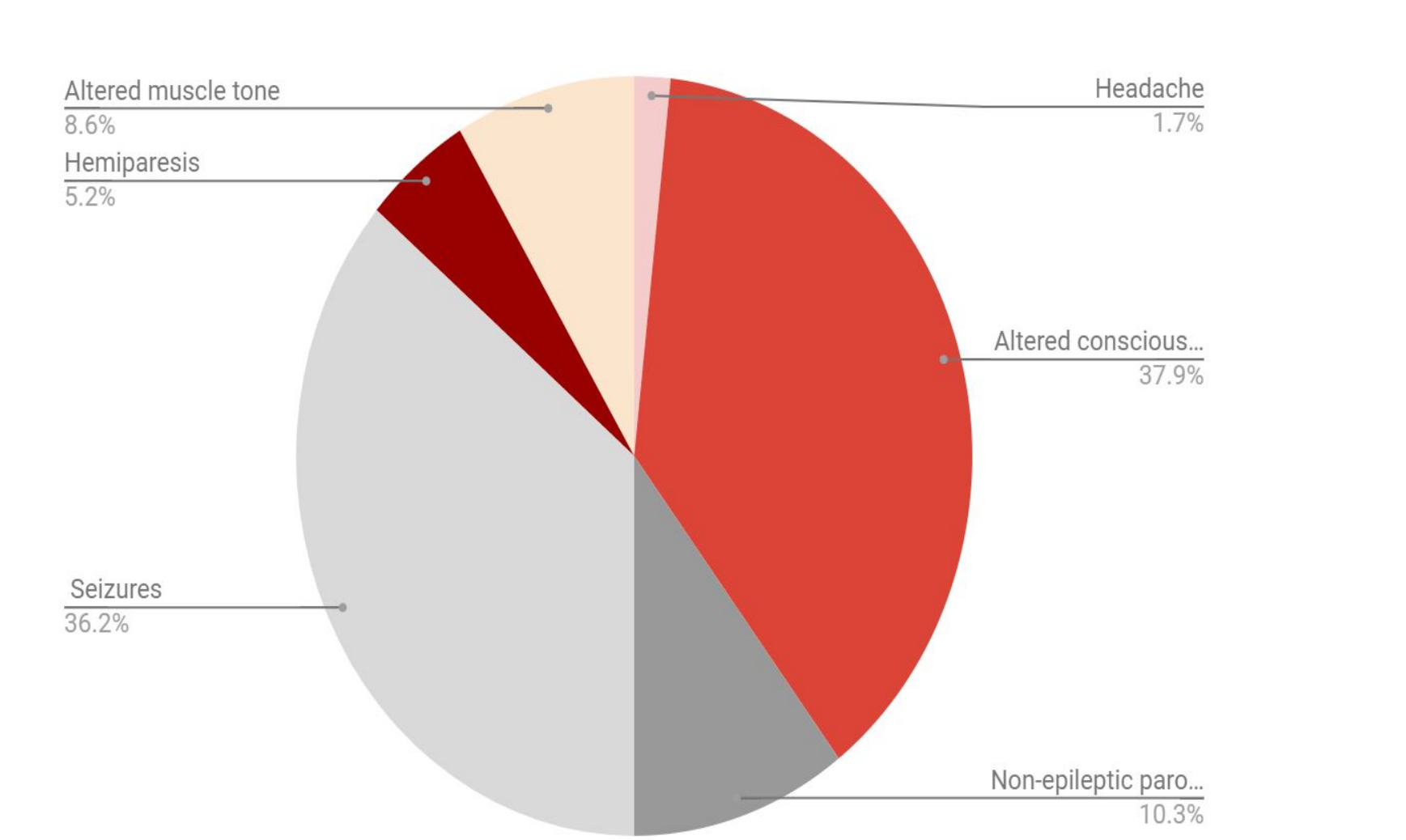


Figure 2: Comorbidities

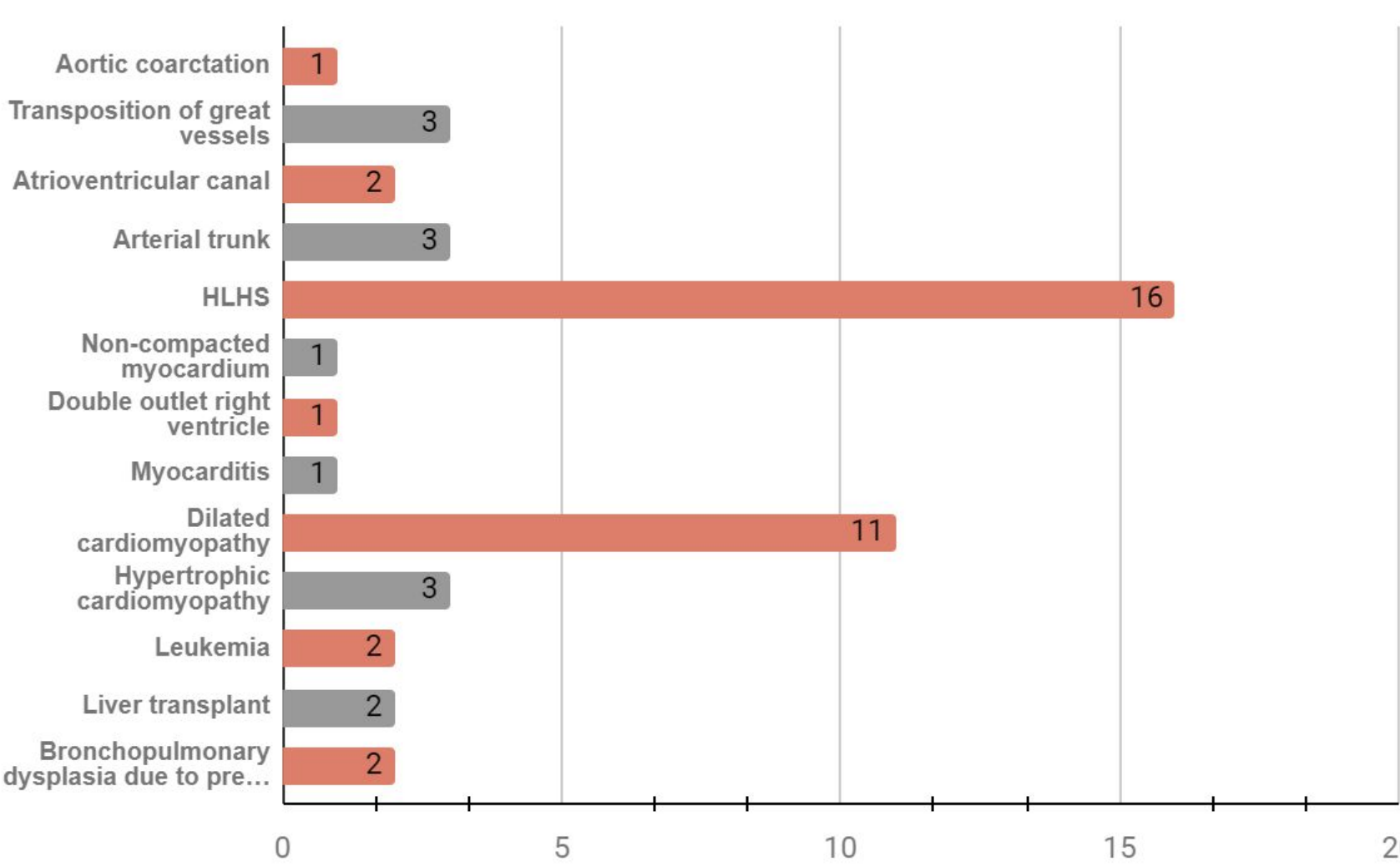
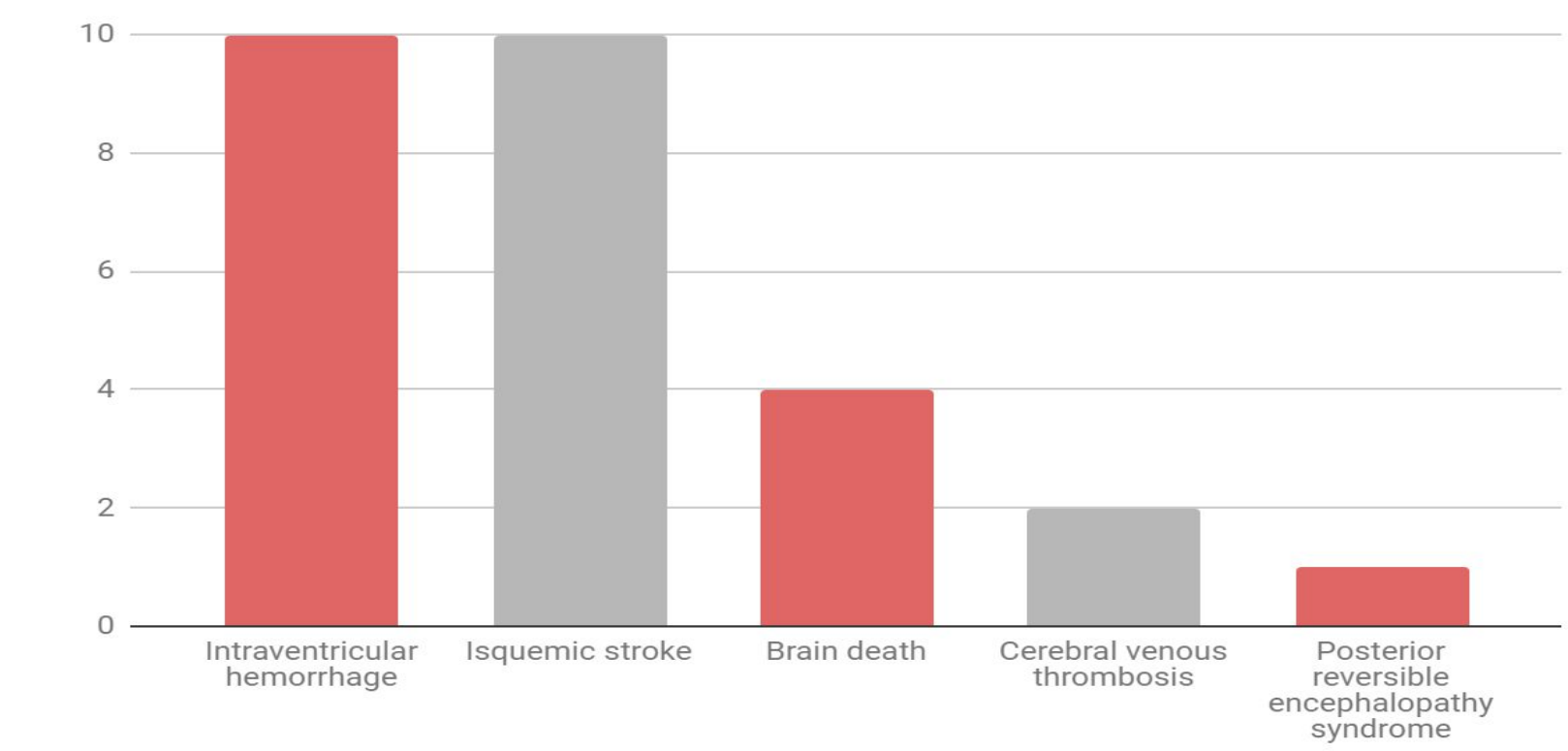


Figure 3: Neurological complications



Conclusions: There is a high rate of neurological complications in ECMO patients, making early identification, prevention, and appropriate treatment essential to provide the best possible care to this critically ill patient population.