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ECMO RESCUE IN A PATIENT WITH THYMOGLOBULIN-INDUCED ARDS AFTER LIVER TRANSPLANTATION

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SHOULD PATIENTS WITH MILD OR MODERATE TRAUMATIC BRAIN INJURY RECEIVE SEIZURE PROPHYLAXIS?

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INTRODUCTION: Post-traumatic seizures occur in patients with traumatic brain injury (TBI). In cases of mild or moderate TBI there is a lack of society guideline clarity to recommend for or against the use of seizure prophylaxis. The purpose of this study is to identify the rate of seizures among the mild and moderate TBI patient population to evaluate if there may be a benefit in extending seizure prophylaxis to patients outside of the severe TBI category.

METHODS: This is a retrospective cohort study including patients from a large academic level I trauma center who were admitted with a diagnosis of TBI between January 2019 and August 2021. Adult patients who were admitted with mild or moderate TBI defined as a Glasgow Coma Scale (GCS) score of 9 or above were included. Patients were excluded if they had a history of seizures, were admitted with concussion, or if time to hospital presentation was greater than 7 days from trauma. The primary outcomes measured included the incidence of suspected and confirmed seizures within the first 7 days from injury. Other data collected included patient demographics, injury patterns, and other pertinent TBI related data points.

RESULTS: A total of 543 patients were included, n=497 for mild and n=46 for moderate. Patients included were mostly male (66.9%) with an average age of 63 years. Blunt trauma mechanism (98.9%) and presence of subdural hematoma (64.8%) and subarachnoid hemorrhage (53%) were most common. 41.4% of patients reported a history of alcohol use and 9.0% reported previous illicit substance use. The median length of hospital and ICU stay were 3 and 2 days respectively. During the first 7 days, 14% of patients were intubated and 7.7% underwent a craniotomy. 31.7% of patients received at least one medication with anti-epileptic properties for an indication other than seizures. The primary outcome was 6.2% (n=31) for suspected and 3.6% (n=18) for confirmed seizures in those with mild TBI and 23.9% (n=11) and 15.2% (n=7) for those with moderate TBI.

CONCLUSIONS: Seizure prophylaxis may be considered in patients who present with moderate TBI and is likely not necessary in those who present with mild TBI given the rates of seizures in this cohort. More robust studies are warranted to elucidate the need for prophylaxis in the moderate TBI population.

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INTRODUCTION: Postoperative care after liver transplantation can be associated with significant cardio-pulmonary complications. Thymoglobulin is used for prevention and treatment of acute rejection in organ transplantations. Although there are few case reports describing thymoglobulin induced acute respiratory distress syndrome in immunocompromised patients, there are limited reports to date on the mortality and outcomes for patients who receive extracorporeal membrane oxygenation therapy after liver transplant.

DESCRIPTION: We present a case of a 43 year old male with decompensated alcoholic cirrhosis with ascites and hepato-renal syndrome who underwent a liver transplant. Intra-operative course was complicated by vasoplegia and coagulopathy. Post-operatively, patient was on intermittent hemodialysis, on minimal ventilator settings. However, on post-operative day 2 the patient had worsening hypoxia within few hours from receiving a dose of thymoglobulin for immunosuppression. The patient had severe ARDS, with requirement of 100% Fio2 and PEEP of 20. Later in the ICU, patient developed bi-ventricular failure with ejection fraction of 30% with need for veno-arterial extracorporeal membrane oxygenation support. His course was complicated by acute kidney injury requiring slow efficiency dialysis, critical illness induced myopathy and prolonged ICU stay. He required a tracheostomy, prolonged ventilator wean and was eventually discharged home.

DISCUSSION: Our patient was diagnosed with thymoglobulin induced ARDS due to acute development of respiratory failure after thymoglobulin administration. Thymoglobulin contains cytotoxic antibodies directed against T-cell markers which can trigger immune mediated acute lung injury. The etiology of thymoglubulin-induced ARDS is not fully understood however it is regarded as a special type of transfusion-related acute lung injury characterized by acute respiratory distress during or within 6 hours after the completion of transfusion. ARDS from thymoglobulin is a rare complication however can be life-threatening. Hence it's prudent that the treating physician is aware of this potential complication which facilitates appropriate management. In our case, management included continuing steroids, utilizing ECMO, renal replacement therapy and ongoing respiratory support.