THE IMPACT OF OBESITY ON OUTCOMES OF PATIENTS ADMITTED TO INTENSIVE CARE AFTER CARDIAC ARREST

Dr Mitul Chavda¹, Dr Shailesh Bihari¹,², Prof Richard Woodman³, Dr Paul Seacombe³,⁴, Dr David Pilcher⁴,⁵,⁶,⁷

¹Flinders Medical Centre, Bedford Park, Australia; ²College of Medicine and Public Health, Flinders University, Bedford Park, Australia; ³Centre of Epidemiology and Biostatistics, College of Medicine and Public Health, Bedford Park, Australia; ⁴Centre of Epidemiology and Biostatistics, College of Medicine and Public Health, Adelaide, Australia; ⁵School of Public Health and Preventive Medicine, Monash University, Australia; ⁶Intensive Care Unit, Alfred Hospital, Australia; ⁷Australia and New Zealand Intensive Care Society Centre for Outcome and Resource Evaluation, Australia

Abstract: Studies examining the association between obesity and mortality in cardiac arrest patients have been inconclusive, with some suggesting obese patients have better survival than the non-obese (the obesity paradox). This might either be due to residual confounding, or a reliance on estimating the conditional effects rather than the marginal (causal) effects of obesity. We estimated the conditional and causal effects of obesity on mortality in cardiac arrest patients using the Australian and New Zealand Intensive Care Society (ANZICS) Adult Patient Database (APD).

Methods: Retrospective registry-based cohort study undertaken in intensive care units (ICUs) in Australia and New Zealand. Participants included all ICU patients admitted with cardiac arrest between 2010 and 2020 with height and weight data recorded. Estimation of the conditional and marginal effects of obesity on mortality using multivariate binary logistic regression and Targeted Maximum Likelihood Estimation (TMLE) respectively. All separate components of the APACHE III score were used for adjustment. The primary outcome was in-hospital mortality.

Results: A total 13 970 patients had complete data and were available for analysis. In an unadjusted analysis, in-hospital mortality was lower in the obese group than the non-obese group (37.8 vs 40.1% respectively, p=0.01). In multivariate binary logistic regression, there was no difference in the odds of in-hospital mortality for the obese versus non-obese groups; adjusted OR=0.95, 95% CI=0.87-1.03; p=0.25. Results were similar using TMLE (Marginal OR=0.97; 95% CI=0.91-1.02, p=0.62).

Conclusion: After adjustment, there was no association between obesity and outcomes in cardiac arrest patients admitted to ICU.

MEMBRANE-BASED THERAPEUTIC PLASMA EXCHANGE IN TERTIARY CARE ICU: DEMOGRAPHICS AND PREDICTORS OF COMPLICATIONS

Dr Mitul Chavda¹, Dr Alpesh Patel¹, Dr Shailesh Bihari¹,²

¹Flinders Medical Centre, South Plympton, Australia; ²College of Medicine and Public Health, Flinders University, Bedford Park, Australia

Abstract: Membrane-based therapeutic plasma exchange (mTPE) has been used to treat various diseases in the ICU setting. However, there is a lack of clinical data regarding the practice of mTPE from Australian Intensive Care Units (ICUs).

Objectives: To determine factors contributing to complications in patients undergoing membrane-based TPE in the ICU.

Methods: Prospectively collected data for mTPE procedures performed at the ICU of Flinders Medical Centre between 2014 to 2020 were analysed.

VIRTUAL VISITING IN INTENSIVE CARE DURING COVID-19

Ms Sharon-Ann Shunker¹

¹Liverpool Hospital, Liverpool, Australia

Introduction: The COVID-19 pandemic posed many challenges. One that struck at the humanitarian core of our ICU staff was the inability to have families visit and support their loved ones in ICU. Visiting restrictions impacted patients, families and ICU staff and required the implementation of novel approaches to Visiting. Objectives: We explored strategies, challenges and barriers of virtual visiting using videoconferencing to bridge the physical gap between patients and their families.

Methods: The pandemic surge necessitated the rapid implementation of virtual visiting with minimal preparation, planning or training. Focus groups were used to theme implemented strategies, challenges and barriers. The impact on patient, families and ICU staff were explored during virtual family conferences, virtual visits and end of life situations. PEXIP was the supported videoconferencing platform.

Results: During the study period, 674 mTPE treatments were performed in 140 patients (71 Male, 50.7%). Haematological disease (30.4%) was the most common indication for mTPE treatment. Citrate was the most common anticoagulation for mTPE (86.1%), while albumin (42.3%) was the most common replacement fluid. Circuit complications occurred in 18.6% of total mTPE treatment. On logistical regression analysis, pre-treatment ionised calcium (OR 42.2, 95% CI 1.8 - 975.0, p=0.02), male sex (OR 2.04, 95% CI 1.04-4, p=0.04), duration of mTPE treatment (OR 1.02, 95% CI 1.01-1.02, p<0.001) and diagnostic categories (p=0.03) were predictors of circuit complications. During mTPE treatment, 87.2% of patients did not experience any complications. On logistical regression analysis, replacement fluid type (p=0.03), lower initial blood flow (OR 0.9, 95% CI 0.9-1.0, p=0.04) and higher exchange volume (OR 8.9, 95% CI 1.6 - 48.7, p=0.01) were predictors of patient complications.

Conclusion: In our large single-centre observational study, we report that mTPE is a safe procedure in the ICU and can be done efficiently by an ICU team. During mTPE, pre-treatment ionised calcium, male sex, duration of mTPE and diagnostic categories were predictors of circuit complications, while replacement fluid type, initial blood flow and higher exchange volume were predictors of patient complications.