



AB092. SOH23ABS_229. Polytrauma in the intensive care unit

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Background: Recently, the Irish Minister for Health designated the Mater Hospital in Dublin and Cork University Hospital as the two major centres for the provision of trauma care in the state. These trauma centres will provide all major relevant specialist services, leading to better outcomes for severely injured patients.

Methods: A 28-year-old man was brought into the emergency department after a road traffic accident; his primary computed tomography (CT) scan showed a small parenchymal haemorrhage in the right frontal cortex, cervical spine fractures, a left humerus fracture, multiple left sided rib fractures resulting in a flail chest and a pneumothorax, extensive pelvic fractures, splenic and renal lacerations, and a thoracic aortic laceration with pseudo-aneurysm. He underwent an emergency endovascular stent placement of the aorta and an exploration of the humoral fracture. As our centre did not have the expertise to provide operative management of the pelvic, cervical, and thoracic fractures, the decision was made to keep the patient intubated and immobilized until his chest injuries had improved. A magnetic resonance imaging (MRI) spine was organized in an effort to remove spinal precautions and facilitate gradual mobilization. On two occasions, the patient derecruited when he was transferred to the MRI safe machine. The patient developed bilateral pneumonia and associated severe acute respiratory distress syndrome (ARDS). Despite bronchioalveolar lavage, the patient required two level 2 lung recruitment strategies [nitric and airway pressure release ventilation with time control adaptive ventilation (APRV-TCAV)] to stabilize his lung. He was accepted to the Mater Hospital for extracorporeal membrane oxygenation (ECMO). Ultimately, he did not need ECMO but 24 hours of APRV-TCAV improved his oxygenation significantly. While in the

major trauma centre, he was reviewed by three specialist services, expediting his recovery and treatment.

Results: While in a major trauma centre, he was reviewed by 3 specialist services, expediting his recovery and treatment. The temporary use of APRV-TCAV enabled the immediate resuscitation and mechanical ventilation of the patient. It ensured that he was ventilated and oxygenated adequately, permitted time to stabilise and transfer the patient to a centre where the patient received multiple disciplinary team review, resulting in successful extubation and recovery.

Conclusions: Major Irish trauma centres will provide all major relevant specialist services for severely injured polytrauma patients in the future. This will likely lead to better outcomes. In the meantime, APRV-TCAV can be a useful treatment or bridging modality when proning is a contraindication in a patient with severe respiratory failure.

Keywords: Acute respiratory distress syndrome (ARDS); derecruitment; intensive care unit; polytrauma; ventilation

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Footnote

Conflicts of Interest: The authors have no conflicts of interest to declare.

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