**Supplemental Figure Legend**

**Figure S1 - Algorithm for Management of Mechanical Ventilation Strategy in Concomitant Brain Injury and ARDS** \*This threshold has not been validated. Because SaO2 90% appears to be the threshold of hypoxic cerebral vasodilatation (Anesth Analg. 85:817-820, 1997) and there is significant heterogeneity in vascular responses in traumatic brain injury, it may be prudent to target SaO2 95% in such patients. Further study is needed. ***Abbreviations***: ARDS Acute Respiratory Distress Syndrome, CBF Cerebral Blood Flow, CPP Cerebral Perfusion Pressure, ECCO2R Extracorporeal CO2 Removal, ECMO Extracorporeal Membrane Oxygenation, ICP Intracranial Pressure, PBW Predicted Body Weight, PEEP Positive End-Expiratory Pressure, SaO2 arterial oxygen saturation. Adapted from Oddo et al: Intensive Care Med, 2016; 42:790-793.