

Supplementary material

Definitions of some variables included in the analysis

Extubation failure was defined as a need for reintubation; the use of prophylactic NIV was not classified as failure of extubation. In accordance with previous studies and consensus[1–4], main reasons for intubation were distinguished as follow: respiratory for acute respiratory failure or acute on chronic respiratory failure, neurological for patients with Glasgow coma scale ≤ 9 or agitation, shock, surgery, and other reasons. Based on previous studies and published consensus [5–9] , the following risk factors for extubation failure were recorded; duration of MV > 7 days, age >65 years, underlying chronic respiratory disease including COPD, obesity-hypoventilation syndrome and restrictive disease, underlying cardiac disease considered in patients with atrial fibrillation, ischemic disease, and or diminishes left ventricular ejection fraction. Underlying respiratory and cardiac diseases were diagnosed using the same criteria than the ones used in the HIGH-WEAN study [1] . Previous neurological disorders including stroke's sequellae and chronic polyneuropathy were recorded. Obesity was considered in patients with body mass index >35 kg/m². Based on the International conference consensus criteria for weaning groups [2], subjects were distinguished whether subjects were extubated within 24 hours after the first SBT (defined as simple weaning), extubated more than 24 hours and less than 7 days after the first unsuccessful SBT (defined as difficult weaning); and extubated more than 7 days after the first unsuccessful SBT (defined as prolonged weaning). The amount of secretions was scored as absent, low quantity, abundant, and very abundant and the cough absent, weak, effective or very effective based on the criteria proposed by Thille AW et al [7]. In order to compare our results with results of other previous studies (1, 3, 5, 6, 8–10), the primary reasons for reintubation were distinguished as follow: cardiac arrest, upper airway obstruction following laryngeal edema,

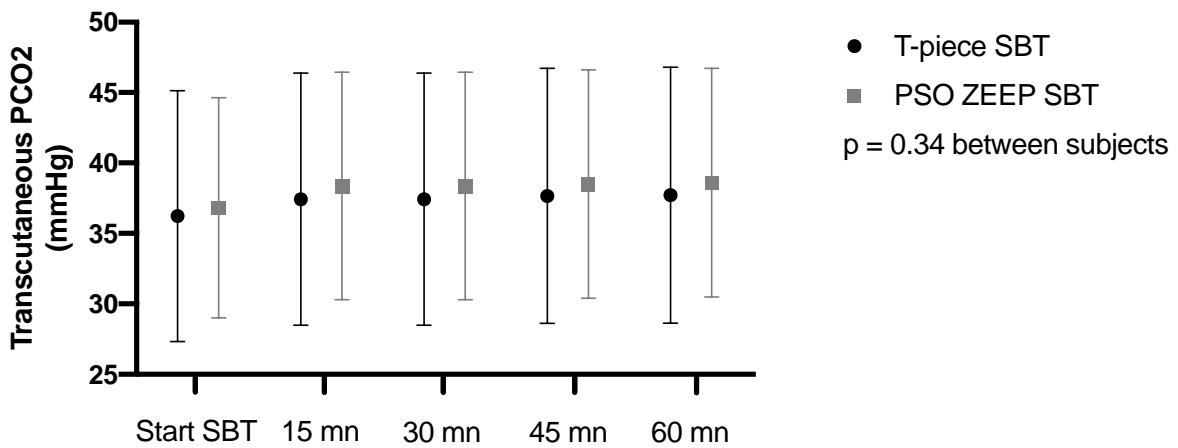
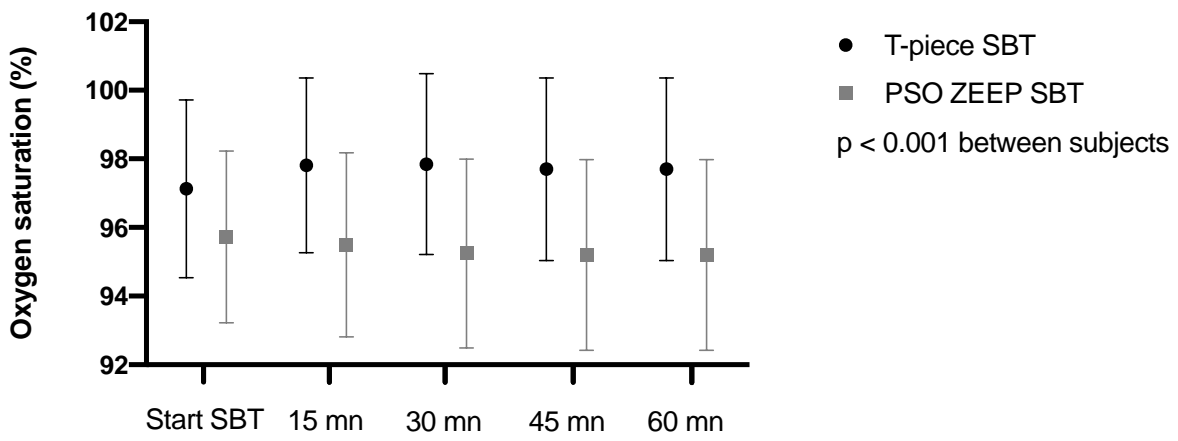
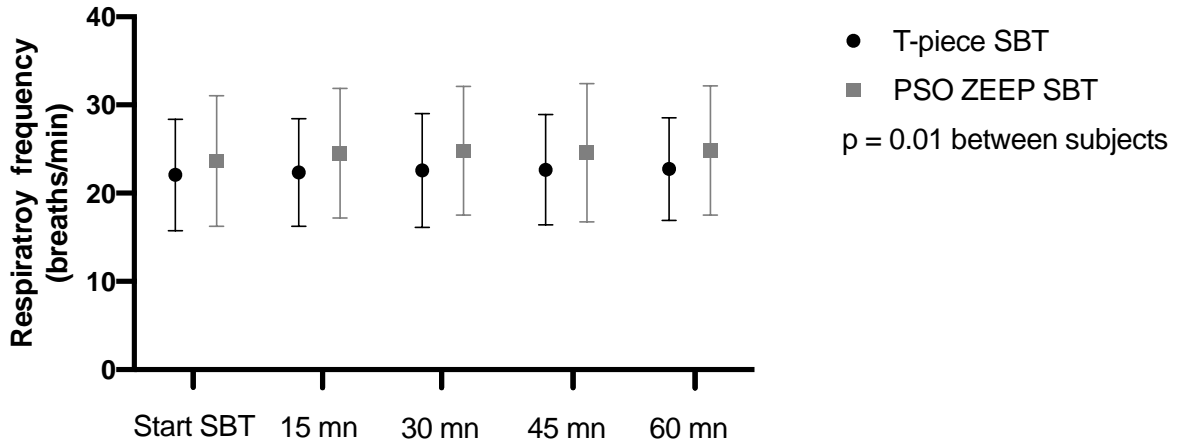
hypoxemia in patients with SpO₂ below 90% despite supplementary oxygen, excessive work of breathing in presence of thoraco-abdominal asynchrony or inspiratory and /or expiratory efforts and mostly increased in PtCO₂ values, and or depressed mental status, aspiration, and shock.

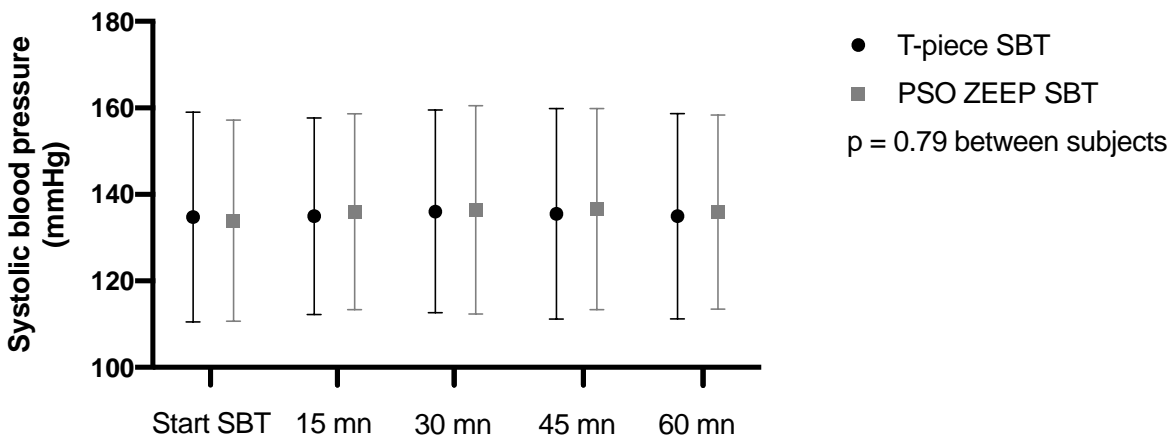
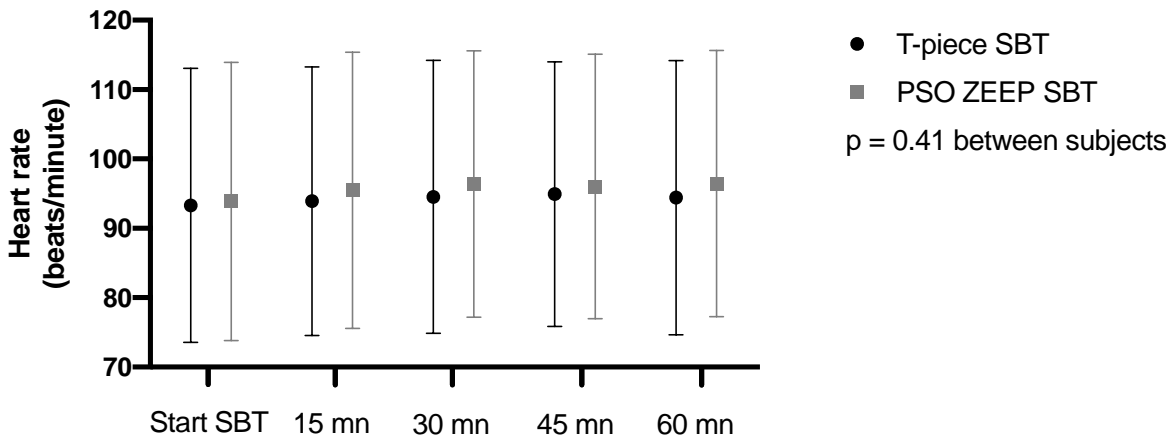
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Supplemental Figure S1: Mean (standard deviation) respiratory frequency, oxygen saturation, transcutaneous PCO₂, heart rate, and systolic blood pressure in each group.