

Category : **Respiratory: mechanical ventilation**

**A357 - Spontaneous-breathing trials before weaning from mechanical ventilation in french icus: the multicenter wave cohort study**

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### **Introduction:**

Weaning from mechanical ventilation (MV) is a common challenge that concerns many patients admitted in intensive care units (ICUs). Current guidelines recommend to systematically perform a spontaneous-breathing trial (SBT) to confirm decision of extubation [1]. Previous studies reported heterogeneous practices in SBT among ICUs. In particular, arterial blood gas (ABG) analysis appeared to be widely prescribed at the end of SBT in some ICUs despite no clear recommendation. The aim of the WAVE study was to describe daily practices in weaning from MV in French ICUs.

### **Methods:**

The observational WAVE study (NCT05801692) was conducted in 16 French ICUs between March and June 2023. All adult patients receiving invasive MV for > 48h and undergoing a SBT were eligible. Participating ICUs were asked to include all consecutive eligible patients during a period of at least 4 weeks. The primary outcome was the modality of SBT. Secondary outcomes were the SBT duration, the SBT success, the timing of extubation and the realisation of ABGs.

### **Results:**

256 patients were included (age: 62±16 years; female: 82 (32%); SAPS II: 51±18; SOFA: 7±3; median duration of MV: 6 days (3.5-11), and 196 (76%) were extubated after a successful SBT. SBT used a T-piece and a pressure-support ventilation (PSV) in respectively 119 (46%) and 137 (53%) patients (p=0.02). Secondary outcomes are presented in **Table 1**.

### **Conclusion:**

PSV SBT was more often performed in participating ICUs and was more often successful than T-piece SBT. However, T-piece SBT was still used in 46% of patients [2][3]. ABG analysis was widely prescribed regardless of the modality of SBT.

Whether ABG analysis should be part of routine practices before weaning from MV deserves further studies.

### **References:**

[1] Boles JM Eur Respir J. 29(5):1033-1356, 2007

[2] Subirà C JAMA 321(22):2175-2182, 2019

[3] Thille AW Spontaneous-Breathing Trials with Pressure-Support Ventilation or a T-Piece. N Engl J Med. 387 (20):1843-54, 2022

### **Table:**

	T-Piece	PSV	Statistic T-Piece vs PSV	Total n(%)
SBT type n(%)*	119 (46.5)	137 (53.5)	p=0.02	256
SBT duration Mean (min) \$	37 +/- 18	64 +/- 55	p<0.001	254

SBT success n(%) <sup>0</sup>	91(76.5)	118(86.1)	p=0.001	219
Extubation during the day following SBT success	60 (65.9%)	100 (84.7%)	p<0.001	160 (76.6%)
Extubation during 24-48 hours following SBT success	16 (17.6%)	4 (3.4%)	p<0.001	20 (9.5%)
Extubation more than 48 hours following SBT success	4 (4.4%)	12 (10.2%)		16 (7.7%)
ABG during SBT n(%)	88 (73.9)	95(63.9)	p=0.07	183(71.2%)

Table 1: Results of WAVE study SBT=Spontaneous Breathing Trial, ABG=Arterial Blood Gas \*1 missing value \$ 3 missing datas <sup>0</sup> 3 missing datas £ 13 missing datas