

Table S1 Inter-rater agreement between 2 investigators of 7,724 RT breaths

Read 1	Read 2					Total
	Early with early relaxation	Early with delayed relaxation	Mid	Late	Breath stacking	
Early with early relaxation	227	643	0	0	0	870
Mid	0	0	4,681	40	0	4,721
Late	0	0	391	462	0	853
Breath stacking	0	0	0	0	1,280	1,280
Total	227	643	5,072	502	1,280	7,724

RT, reverse triggering.

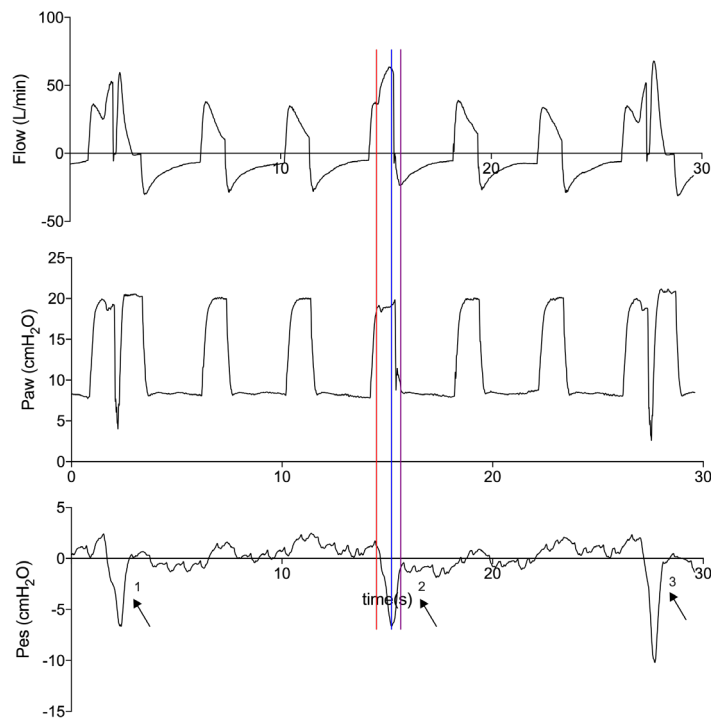


Figure S1 Early RT with early expiratory relaxation during PACV indicated by arrows. The initiation of RT (the red line) and the max inspiratory effort (the blue line) occurred during the inflation phase. But the termination of RT (the purple line) occurred before 50% volume loss during deflation. The second RT breath was classified as “Early RT with early relaxation” after discussion. Paw, airway pressure; Pes, esophageal pressure; RT, reverse triggering; PACV, pressure assist/control ventilation.

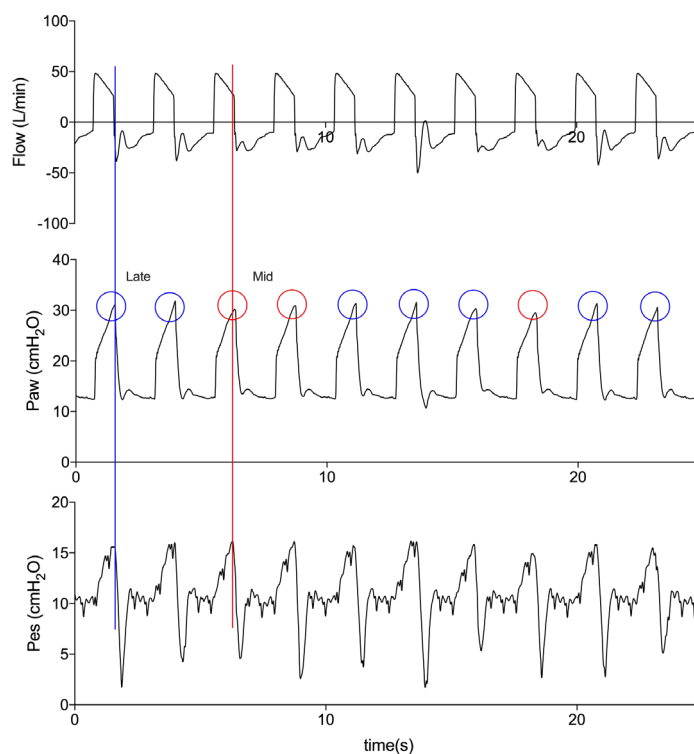


Figure S2 Mid-cycle RT and late RT during VACV. The blue circle was classified as late RT. However, the PIP in the red circle was lower than that in the blue circle, indicating the start of an inspiratory effort. Moreover, the Pes waveform also indicated an inspiratory effort started at the end of the ventilator inflation. Thus, the red circles in *Figure S2* were classified as “Mid-cycle RT” after discussion. Paw, airway pressure; Pes, esophageal pressure; RT, reverse triggering; VACV, volume assist/control ventilation; PIP, inspiratory peak pressure.

Table S2 Comparison between patients with and without BD

Category	BD (n=11)	No-BD (n=42)	P
Age (years)	49 [35–54]	54 [39–66]	0.15
Male	8 (72.7)	26 (61.9)	0.39
APACHE II at ICU admission	16 [13–23]	19 [14–22]	0.28
ARDS	3 (27.3)	9 (21.4)	0.70
Type of brain injury			0.53
Stroke	3 (27.3)	19 (45.2)	
Post-craniotomy for brain tumors	4 (36.4)	12 (28.6)	
TBI	4 (36.4)	11 (26.2)	
Infratentorial lesions	4 (36.4)	19 (45.2)	0.74
SOFA at inclusion	7 [5–7]	5 [4–7]	0.34
GCS at inclusion	10 [5–11]	10 [5–11]	0.68
PaO ₂ /FiO ₂ ratio at inclusion (mmHg)	180.0 [132.5–230.0]	273 [186–396]	0.02
PaCO ₂ at inclusion (mmHg)	41.0 [3.04–49.0]	37.0 [32.5–40.0]	0.18
Outcomes			
ICU mortality	3 (27.3)	5 (11.9)	0.34
In-hospital mortality	4 (36.4)	6 (14.3)	0.18

Categorical variables are shown as number (percentage); continuous variables are shown as median [interquartile range]. BD, breath stacking; APACHE II, Acute Physiology and Chronic Health Evaluation II; ICU, intensive care unit; ARDS, acute respiratory distress syndrome; TBI, traumatic brain injury; SOFA, Sequential Organ Failure Assessment; GCS, Glasgow Coma Scale; PaO₂, partial pressure of oxygen; FiO₂, fraction of inspired oxygen; PaCO₂, partial pressure of carbon dioxide in artery.