

Volume support

Θεόδωρος Βασιλακόπουλος

Καθηγητής Πνευμονολογίας-Εντατικής Θεραπείας

Εθνικό & Καποδιστριακό Πανεπιστήμιο Αθηνών

Νοσοκομείο «ο Ευαγγελισμός»

Adjunct Professor, McGill University, Montreal, Canada

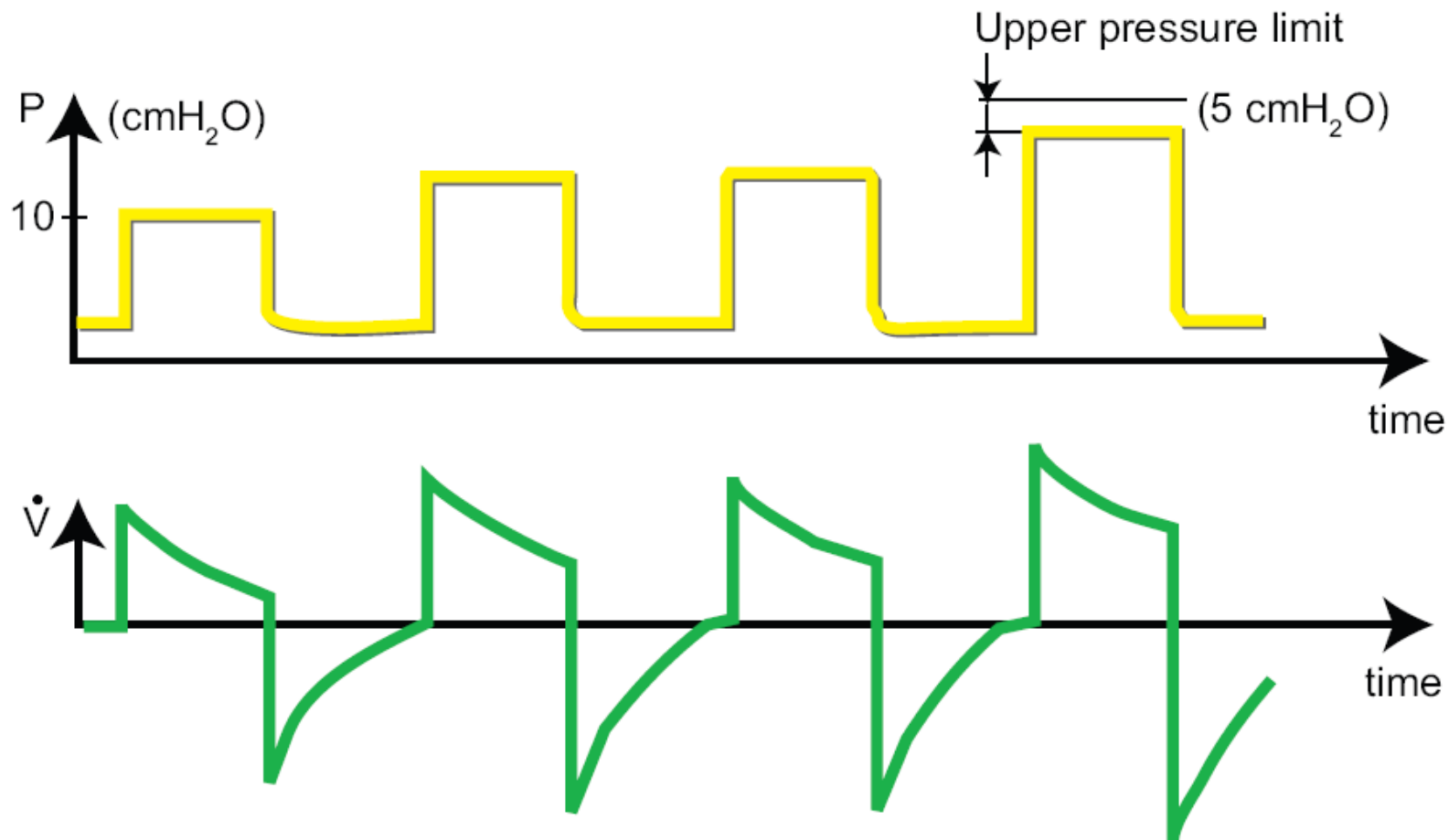
Γενικός Γραμματέας Ελληνικής Πνευμονολογικής Εταιρείας

Volume support

- Pressure support
- Set Tidal Volume is “targeted”
- Ventilator estimates volume/pressure relationship each breath
- Ventilator adjusts level of pressure support *breath by breath*

Volume support

- The **start-up sequence** comprises **four breaths**. During these four breaths the ventilator **regulates the pressure** level to support the patient so that he/she receives the **pre-set Tidal Volume**.
- The first breath is given with a support of 10 cmH₂O.
- During the remaining three breaths, the maximum pressure increases in increments of 3 up to a maximum of 20 cmH₂O for each breath.



VOLUME SUPPORT (VS)

The start-up sequence is 4 breaths. The first breath is given with a support of $10 \text{ cmH}_2\text{O}$. From that breath the ventilator continually calculates and regulates the pressure needed to deliver the preset Tidal Volume. During the remaining 3 test breaths, the maximum pressure increase is $20 \text{ cmH}_2\text{O}$ for each breath.

Volume Support

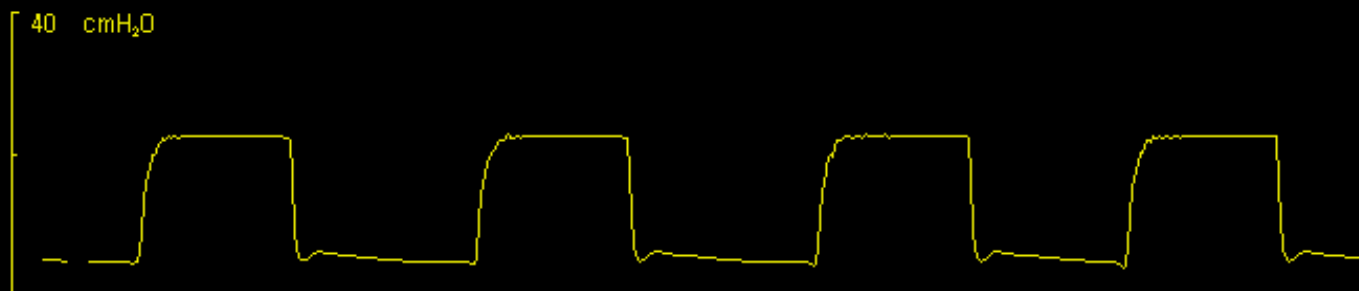
 **Mode**
Volume Support

MAQUET
05/11/2003

Nebulizer

Status

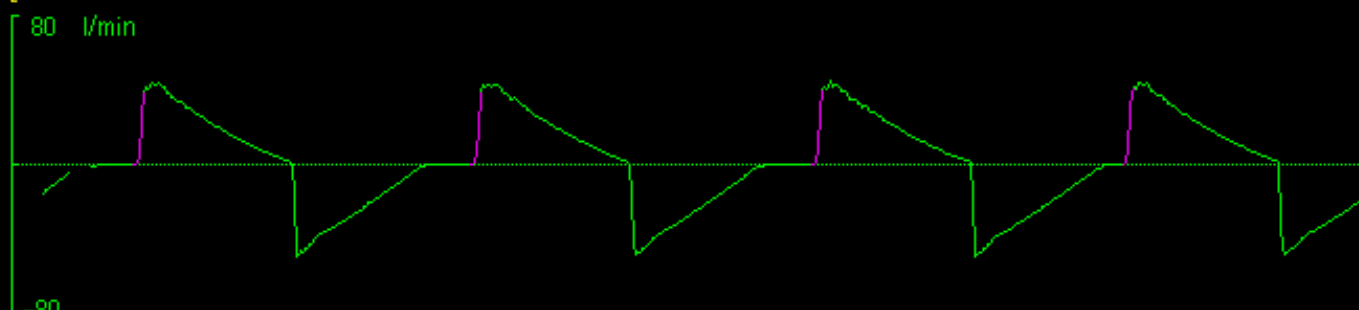

05/11 14:18



Ppeak (cmH₂O) 41
23

Pmean (cmH₂O) 14

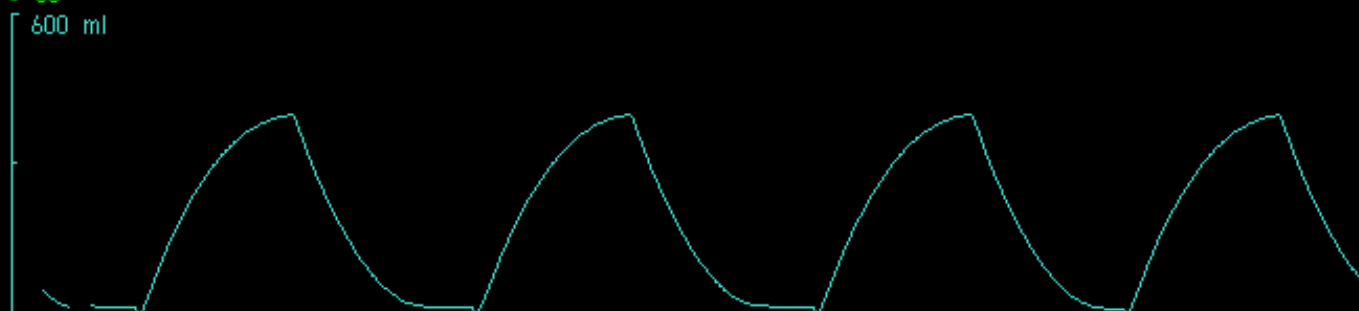
PEEP (cmH₂O) 5



RR (b/min) 40
25

O₂ (%) 26
19

Ti/Ttot 0.43



MVe (l/min) 40.0
9.5

VTi (ml) 399

VT_e (ml) 389

Additional settings

O₂ conc. 21 %

PEEP 5 cmH₂O

Tidal Volume 400 ml

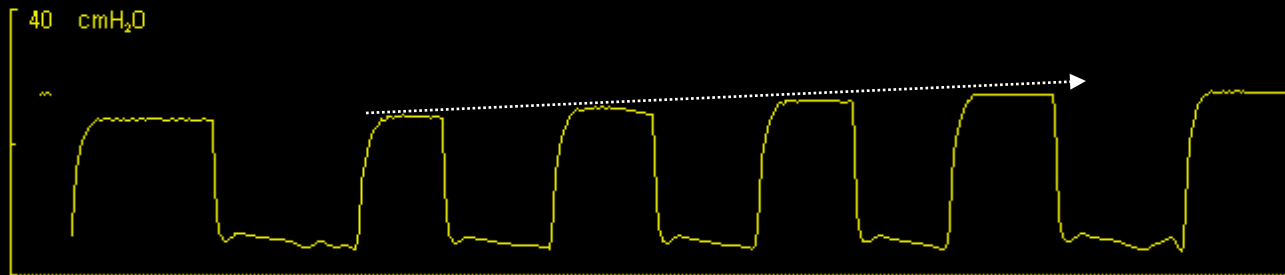
Additional values

- If the Tidal Volume is less than the preset Tidal Volume, then the ventilator will increase the Pressure Support for the next triggered breath. The pressure increase can be from 1 to 3 cmH₂O.
- If the Tidal Volume is more than the pre-set Tidal Volume, then the Pressure Support for the next triggered breath will decrease in steps from 1 to 3 cmH₂O.
- The inspiratory Pressure Support level will automatically adapt to changes in the mechanical properties of the lung/thorax and patient effort.
- The Tidal Volume can vary from breath to breath, depending on patient activity.

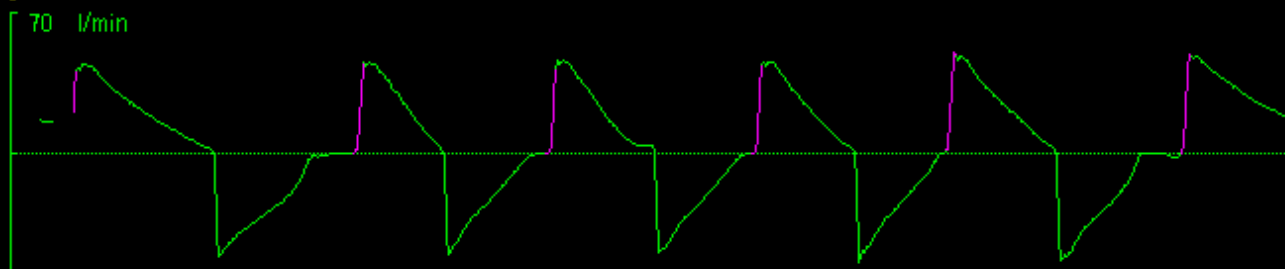
Volume Support - Adjustments

Mode: Volume Support Admit patient Nebulizer Status:

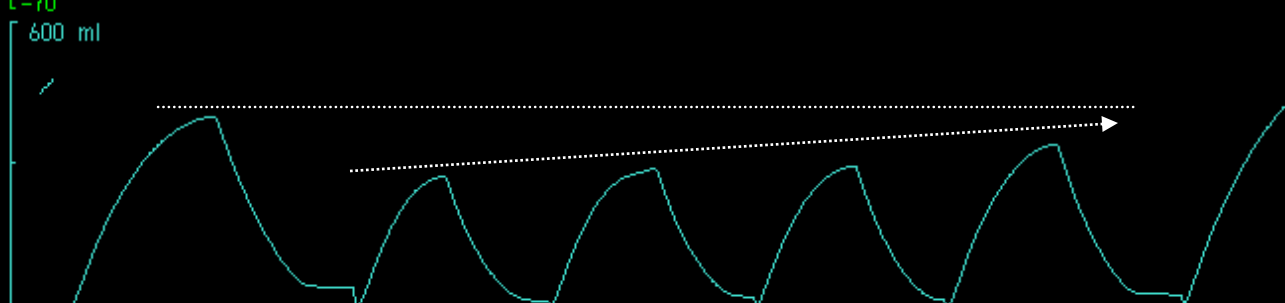
05/11 17:00



Ppeak (cmH₂O) 41
28
Pmean (cmH₂O) 15
PEEP (cmH₂O) 6



RR (b/min) 35
30
O₂ (%) 26
20
Ti/Ttot 18



MVe (l/min) 40.0
9.6 5.0
VTi (ml) 343
VTt (ml) 320

Additional settings: O₂ conc. 21% PEEP 5 cmH₂O Tidal Volume 400 ml Additional values