Pitching

Breathing Management

Experiences & Devices

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Philips Ventilator: Respironics BiPAP A40 Pro

- Used particularly for nighlty assisted ventilation at home: sleep apnea.
- Specifications:

Product specifications

Ventilation modes	· CPAP · S · S/T · PC · T · AVAPS-AE
Hybrid ventilation	· AVAPS (Average Volume Assured Pressure Support) · AVAPS-AE
IPAP	4 – 40 cmH_2O
EPAP	4 – 25 cmH_2O
Target tidal volume (AVAPS and AVAPS-AE)	200 – 1500 ml
Breath rate	0 – 40 bpm (4 – 40 bpm in T mode)
Inspiratory time	0.5 – 3 sec
Triggering and cycliing	· Auto-Trak · Sensitive Auto-Trak · Flow triggering
Rise time	1 (100 ms) – 6 (600 ms)

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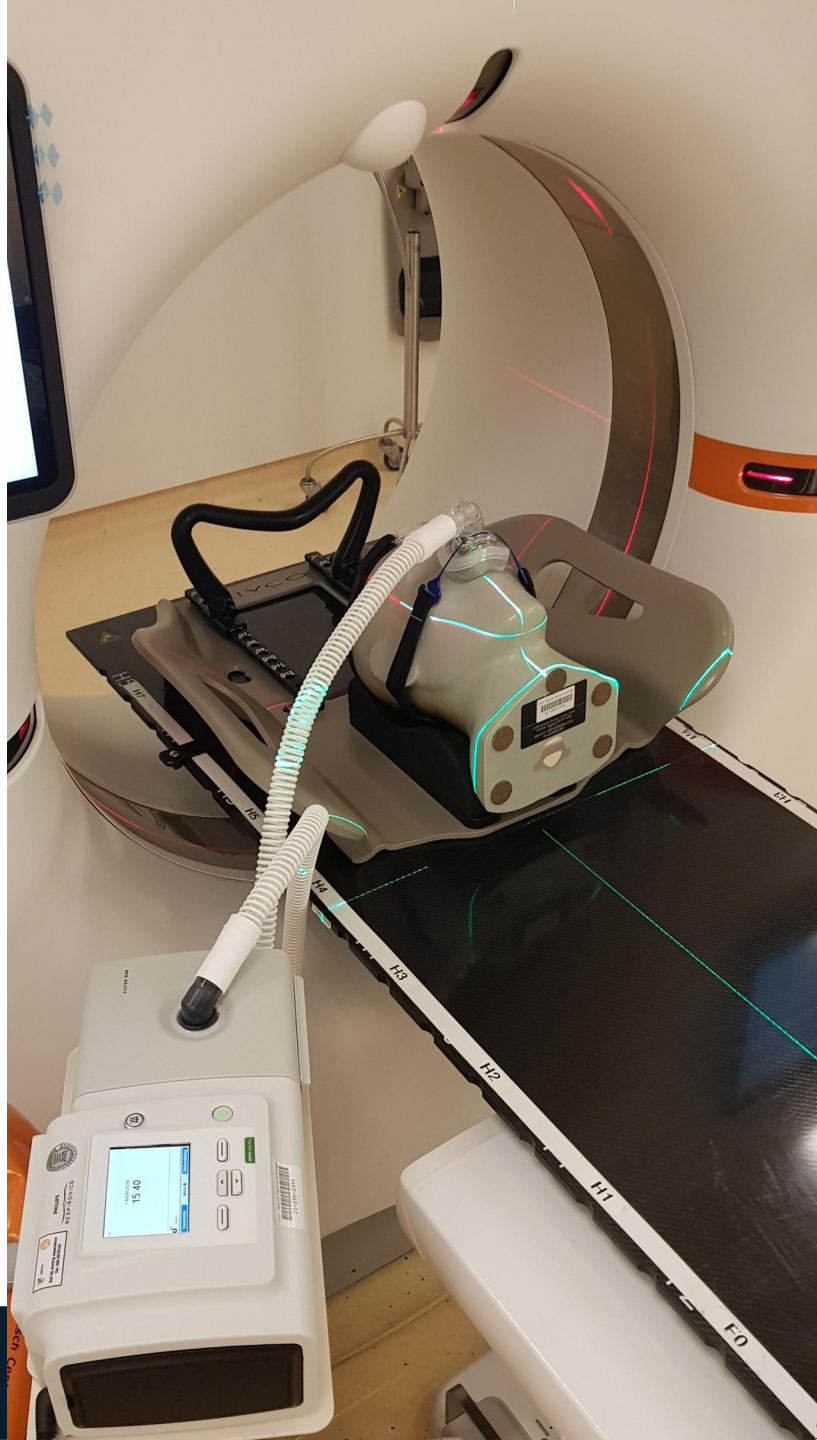

Research

- Aim: to evaluate tumor motion with the use of BiPAP and compare this to free-breathing tumor motion.

- Population: patients with intra-thoracic malignancy that will receive (non-stereotactic) radiotherapy
  - Lung cancer
  - Oesophagal cancer
  - Malignant lymphoma

- Numbers: 6/21 patients included in the study
- Sessions: 4-6 → BL and weekly during the course of RT

- RT without BiPAP.

Specific breathing management strategy

- Ventilation frequencies
  - Set 2 breaths/min above free-breathing rate of the patient
- What mask
  - FlexiFit Nose mask
- Oxygen
  - No O_2 suppletion

Settings

- BiPAP 14/10 cmH_2O, start with back-up respiratory rate 7.
- Wait 3-5 minutes → increase BURR: 2 above own respiratory rate.
- Tidal volumes:
  - <300 ml → increase IPAP with 1
  - >600 ml → decrease IPAP with 1
  - Patient ‘triggers’ ventilator: give instruction to patient, increase BURR.

Pros & Cons of the device

Pros

- Easy in use
- ‘Fool proof’
- Easily available

Cons

- Limited in setting adjustments
- May be less suitable for reproducible lowering of target motion.

Next stage, future plans

- Continue inclusion for the study

- Optimise
  - Instruction/learning for the patient
  - Settings of the device