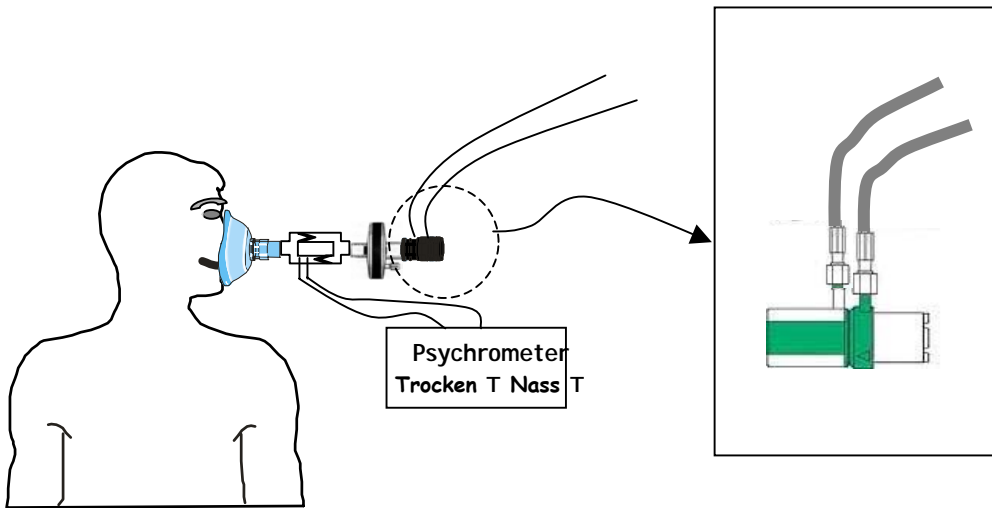
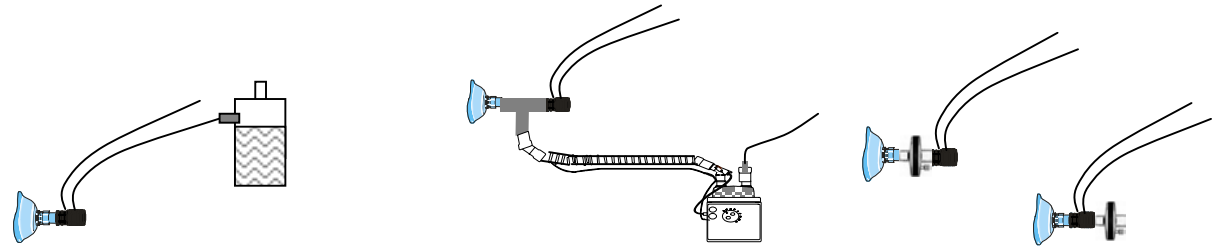
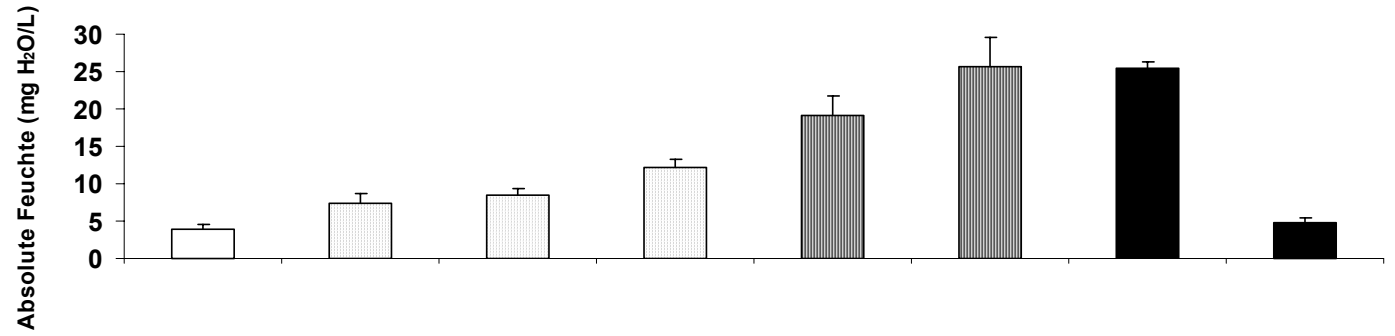
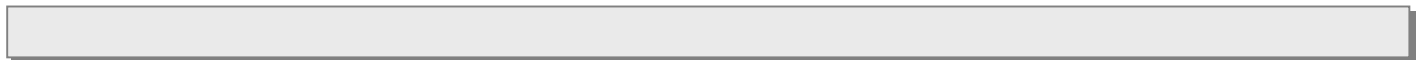


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HYGROMETRIC MEASUREMENTS DURING CPAP WITH BOUSSIGNAC® CPAP AND DIFFERENT HUMIDIFICATION STRATEGY IN HEALTHY SUBJECTS

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Introduction

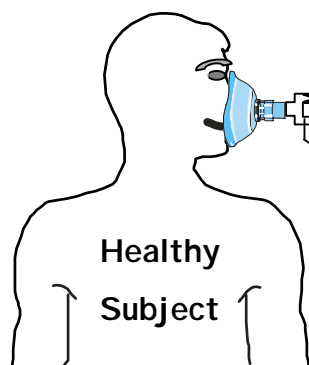
CPAP can be performed with Boussignac® CPAP, using high oxygen and air flows. Inspired gases may be underhumidified leading to discomfort and increased nasal resistances. The aim of the study is to assess the level of humidification obtained with different humidification strategies

Méthods

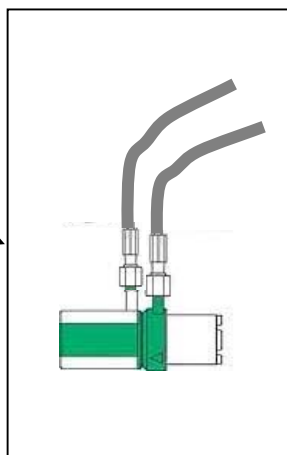
In 10 healthy subjects breathing with CPAP (Boussignac® CPAP, Vygon) kept constant at 7.5 cmH₂O, several humidification strategies were tested:

- Heated humidifiers (HH) (MR 850, Fisher&Paykel) used with an additional gas (tested at 7 and 12L/min flow).
- Heat and moisture exchanger (HME) (dead space 28 ml) (placed between mask and CPAP or after the CPAP),
- Cold water humidification on one or two of the CPAP device
- No humidification.

Hygrometry of inspired gas was measured with psychrometric method during steady state.

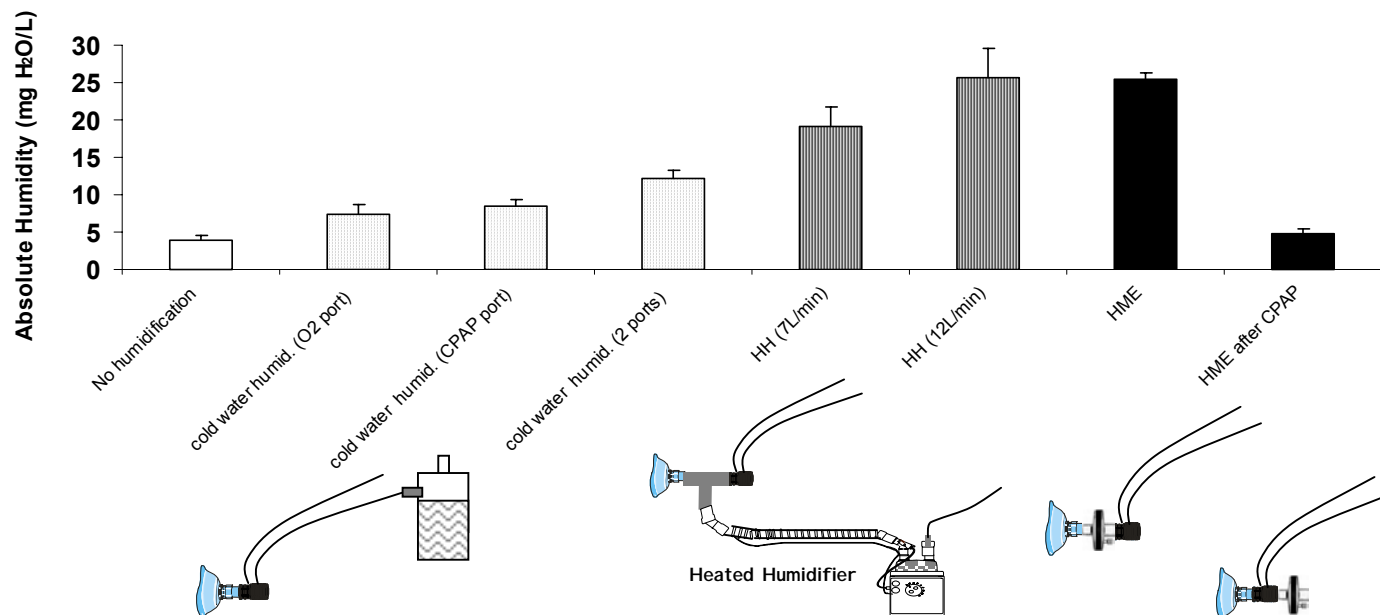


Psychrometer
Dry T Wet T



Detail of the CPAP device

Results



Conclusions

- Hygrometric performances are greatly influenced by humidification strategy and were adequate only when an HME or HH were used.
- If HMEs are used to humidify gas during CPAP with Boussignac device, two points must be kept in mind

- 1) The location of the HME strongly influences its performance.
- 2) In case of leaks, humidification can become very poor because of water reservoir loss (Tilling&Hayes Br J Anesth 1987, Lellouche ATS 2002)

