

# Desaturations and adverse events among unselected ERCPs – incidence, risk factors, and adequate documentation from a quality control perspective

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## Aims

This study aimed to assess the rate of desaturations among NAPS (nurse-assisted propofol sedation)-ERCs. Also, overall awareness of adverse events (AEs) as measured by documentation was assessed.

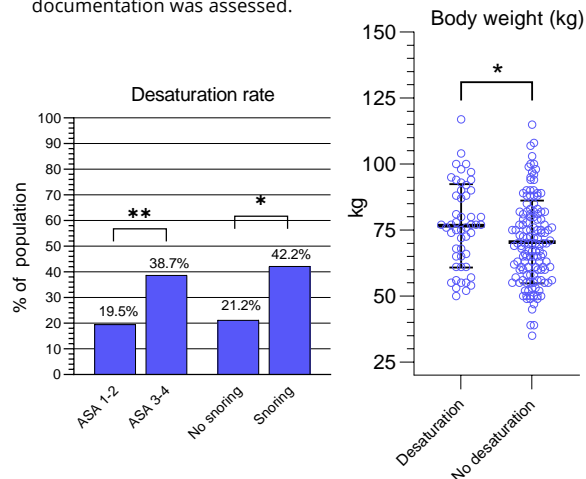


Figure 1. (left figure) ASA status & snoring; (right figure) mean (SD) total body weight in both groups; \* p < 0.05, \*\* p < 0.01

## Results

Of 233 performed ERCs, 231 were included and for 211 (91%) desaturation data were available. Mean age was 67.8 (SD 15.7), 52% were female. Of all procedures, 94% were performed with NAPS, with most (74%) procedures starting with an O<sub>2</sub> flow 2 liters/minute (standard), 6% were performed with the patient intubated.

### Desaturation events (Fig. 2)

- 22.7% of NAPS procedures (min. SpO<sub>2</sub> 77% (±5.8%))
- 28.3% rate of intervention for hypoxemia
  - 27% increasing O<sub>2</sub>-flow,
  - 15% chin lift,
  - and/or 9% Wendel tube.
  - 1% of procedures aborted

### Risk factors: (Fig. 1)

- weight (p=0.01) / BMI (p=0.01)
- ASA-classification (p=0.004)
- snoring (p=0.01) (according to patient)

No other risk factors concerning meaningful epidemiological or clinical factors were identified (e.g., Charlson comorb. index, smoking, emergency procedure, duration, Propofol mg/kg).

All-cause **30-day mortality** was significantly higher in the desaturation group (10.7% vs. 2.8%, p=0.031), patients were also significantly more comorbid (CCI 9 vs. 4, p<0.01) (Fig. 2)

Compliance with documentation was low, 22.2% of post-ERCP pancreatitis, 19% of intraprocedural bleeding, 20% of desaturations, 2.2% of hypotensive, and 0% of hypertensive events were officially recorded/documented.

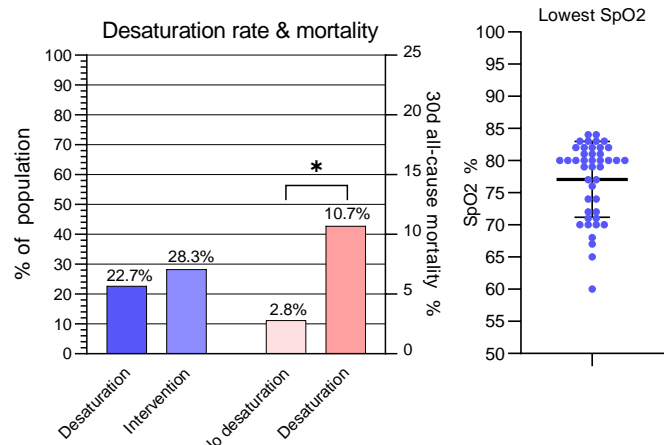


Figure 2. (left figure) Desaturation events (%) (=SpO<sub>2</sub> < 85%), and interventions for hypoxemia (%) and 30d all-cause mortality of patients without and with a hypoxemia event; (right figure) minimal documented SpO<sub>2</sub> of desaturation events (mean ± SD); \* p < 0.05

## Conclusion

Sedation related AEs are common and statistically significantly associated with 30-day mortality, possibly indicating intensified postinterventional (IMCU?) monitoring.

However, awareness of AEs by endoscopists and physicians is very low and likely underappreciated and underreported outside of trials or automatic acquisition systems in electronic health records. This may impact patient safety and endoscopists' training in the context of inaccurate perception and imprecise feedback.

## Methods

All ERCs performed over 4-month period were included. Desaturations and methods to correct hypoxemia were recorded by nursing staff, adverse events (AEs), risk factors, and outcomes were recorded/extracted by study staff.