

## Introduction

- The 2014 ASA practice guidelines recommend monitoring postoperative patients with obstructive sleep apnea (OSA) for 3 hours longer than non-OSA patients
- Literature suggests these patients are at higher risk of postoperative complications than non-OSA patients
- Extended monitoring for OSA at St Joseph's Health Care (SJHC) is 4 hours in PACU
  - Apnea or desaturation in PACU= admission for overnight oximetry
  - No events in PACU= discharge home or ward without oximetry

## Hypothesis

- We predict that patients who fail extended PACU monitoring will do so within 2 hours of admission to PACU

## Methods

- Design: retrospective chart review
- Population: 237 patients undergoing surgery with general anesthesia at SJHC from June 2011-March 2015 selected by diagnosis of OSA or at risk by preoperative screening questionnaire
- 24 patients excluded
- All ASA class I-III
- Outcomes measured:
  - Length of time from admission to PACU to apnea or desaturation ('failure')
  - Incidence of postoperative complication within or beyond 24 hours

## Results

- The average length of time from PACU admission to failure was 79 minutes.
- Range from 39-170 minutes
- There were no apneas recorded in PACU
- There was no significant difference for patients identified by preoperative questionnaire vs known OSA
- There were 72 planned admissions, and 7 unplanned admissions
- After discharge from PACU, the only intervention required was supplemental oxygen. No other adverse events were recorded

Table 1: Demographics

| Total     |           | 213       |     |
|-----------|-----------|-----------|-----|
| Age       | Range     | 18-83     |     |
|           | Mean/Mode | 54/65     |     |
| Gender    | Male      | 149       | 70% |
|           | Female    | 64        | 30% |
| BMI       | Range     | 17.2-70   |     |
|           | Mean/Mode | 35.2/32.7 |     |
| Known OSA |           | 81        | 38% |
| At risk   |           | 132       | 62% |

Table 2: Desaturations in PACU

|         | Total | # failed | %    |          |
|---------|-------|----------|------|----------|
| Overall | 213   | 79       | 37   |          |
| Age >50 | 145   | 59       | 40.7 | p=0.11   |
| Age ≤50 | 68    | 20       | 29.4 |          |
| Female  | 64    | 32       | 50   | p=0.01   |
| Male    | 149   | 47       | 31.5 |          |
| BMI ≥35 | 98    | 54       | 55.1 | p<0.0001 |
| BMI <35 | 115   | 25       | 21.7 |          |

Table 3: Postoperative Complications

|                     | PACU | 4-24h | ≥24h |
|---------------------|------|-------|------|
| Supplemental oxygen | 35   | 37    | 0    |
| Airway Obstruction  | 0    | 1     | 0    |
| ER visits*          | 0    | 0     | 16   |

\*No ER visits for respiratory or cardiac complications

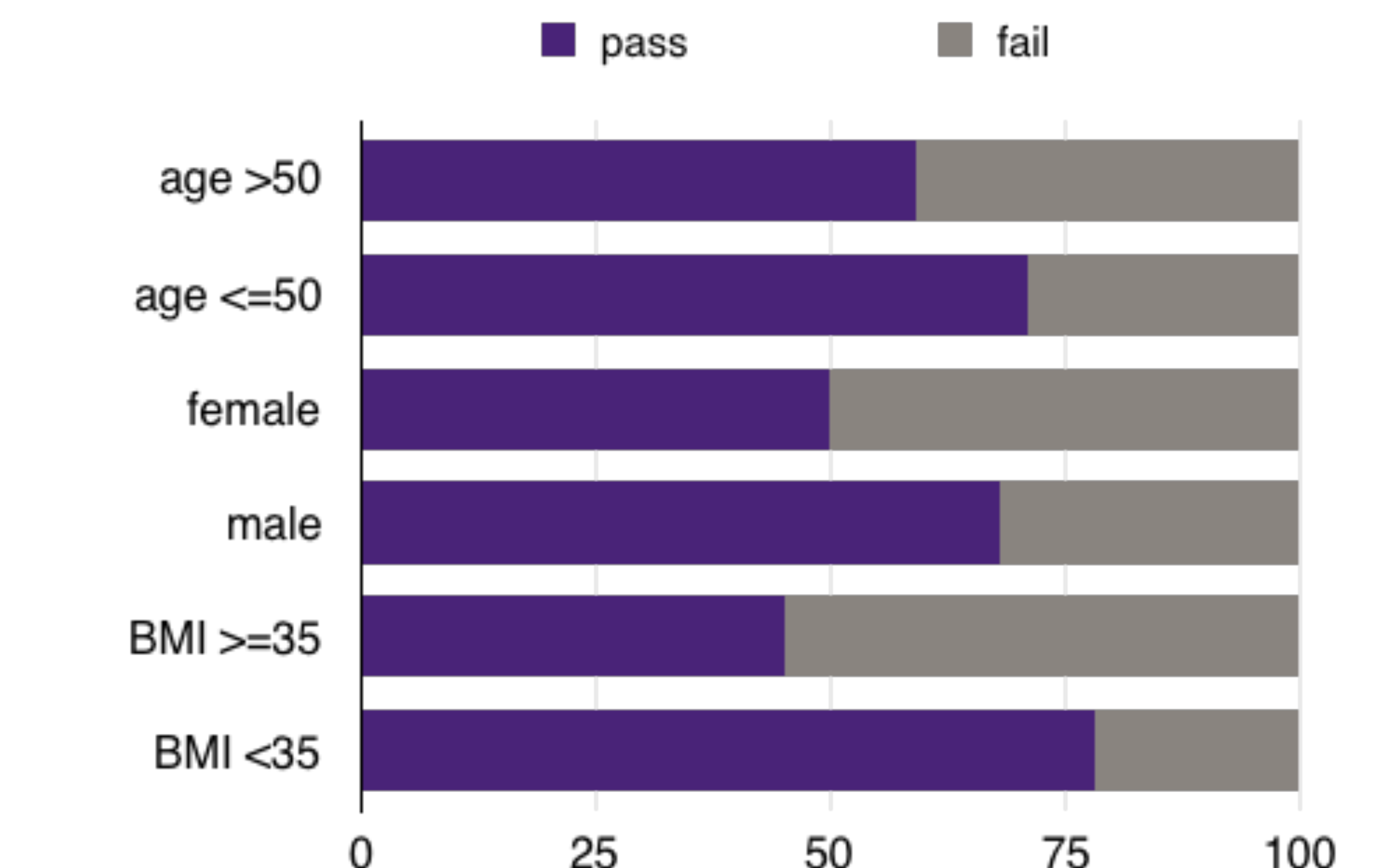


Figure 1: Percentage of patients who passed PACU 4-hour monitoring

## Discussion

- If postoperative monitoring were limited to 2 hours, we would likely miss respiratory events in this patient population
- It may be possible to limit postoperative monitoring for OSA patients to 3 hours. A larger study would be required.
- It is unclear whether extended postoperative monitoring in these patients is preventing clinically significant adverse events

## Conclusions

- All patients who failed monitoring did so within 3 hours of admission to PACU
- No adverse events identified either in the first 24h postoperatively or after

## References

- Practice guidelines for the perioperative management of patients with obstructive sleep apnea: a report by the American Society of Anesthesiologists Task Force on Perioperative Management of Patients with Obstructive Sleep Apnea. *Anesthesiology* 2006 May;104(5):1081-93.
- Practice guidelines for the perioperative management of patients with obstructive sleep apnea: an updated report by the American Society of Anesthesiologists Task Force on Perioperative Management of Patients with Obstructive Sleep Apnea. *Anesthesiology*. 2014 Feb;120(2):268-86
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- Lockhart EM, Willingham MD, Abdallah AB, Holstein DL, Bedair BA, Thomas J, Duntley D, Avidan MS. Obstructive sleep apnea screening and postoperative mortality in a large surgical cohort. *Sleep Med*. 2013; 14:407-15