

GENERAL ANAESTHESIA FOR CAESAREAN DELIVERY IN WOMEN WITH CLASS 3 OBESITY – A RETROSPECTIVE STUDY FROM THE NORTH-WEST OF ENGLAND

A. ASHOUR, K. BHATIA, M. COLUMB ON BEHALF OF GROUP OF OBSTETRIC ANESTHETISTS OF LANCASHIRE, GREATER MANCHESTER, AND MERSEY (GOAL-GM) STUDY COLLABORATORS

Introduction:

- Women with class 3 obesity (body mass index [BMI] ≥ 40 kg.m⁻²) are at increased risk of requiring a caesarean delivery (CD).¹
- Though regional anaesthesia (RA) is the preferred technique, a general anaesthetic (GA) may need to be administered during CD.

Methods:

- We retrospectively reviewed electronic records of 56 (7.4%) of the 760 women with booking BMI ≥ 40 kg.m⁻² who had a GA for CD across nine maternity units in the North-West of England between 1st of October 2022 to 30th of September 2023 .
- Our aims were to evaluate the GA technique utilised for CD, and airway complications during induction including ascertaining incidence of oxygen (SpO₂) desaturation (< 94%) and difficult (> 2 attempts) or failed intubation in this cohort.

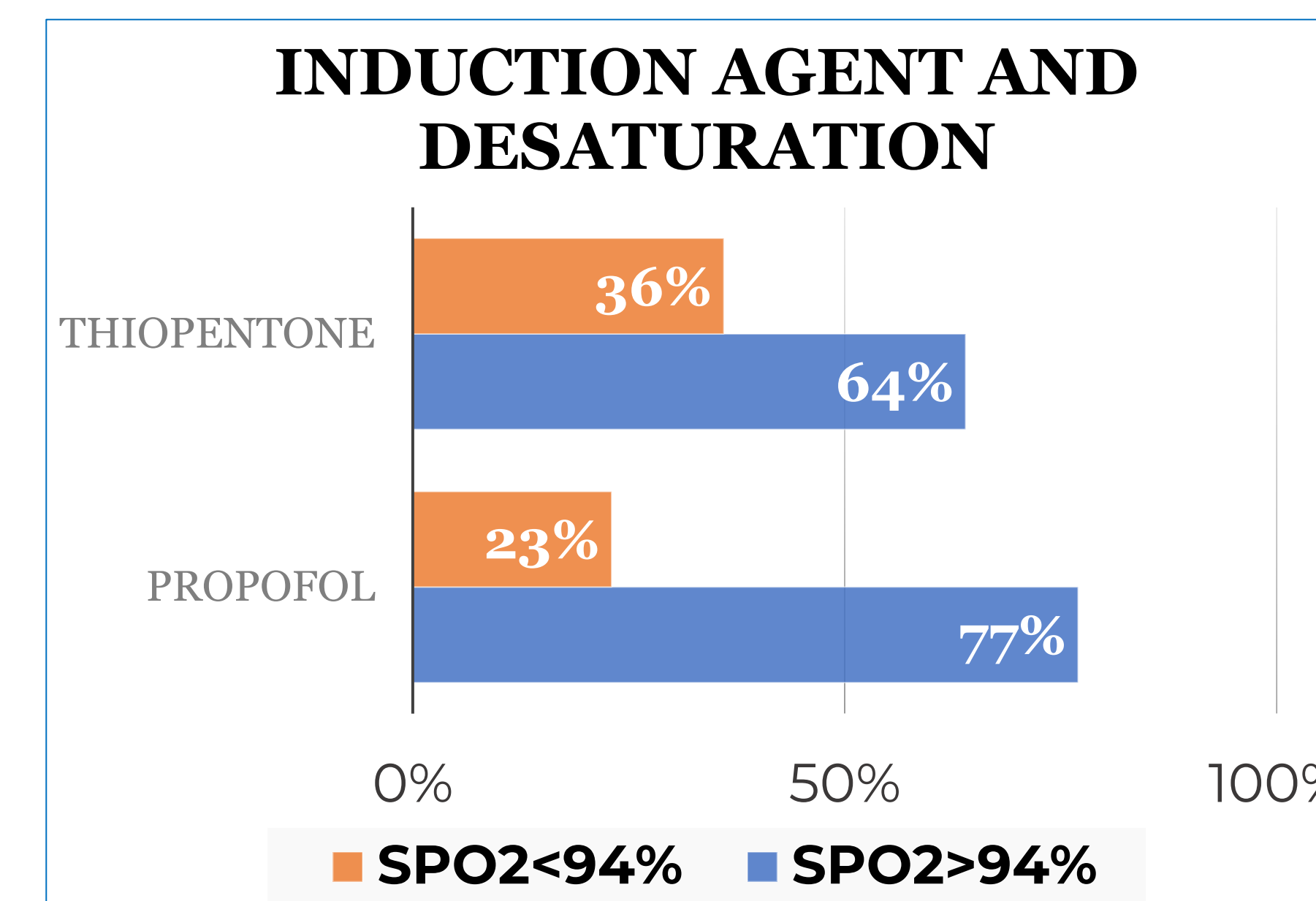
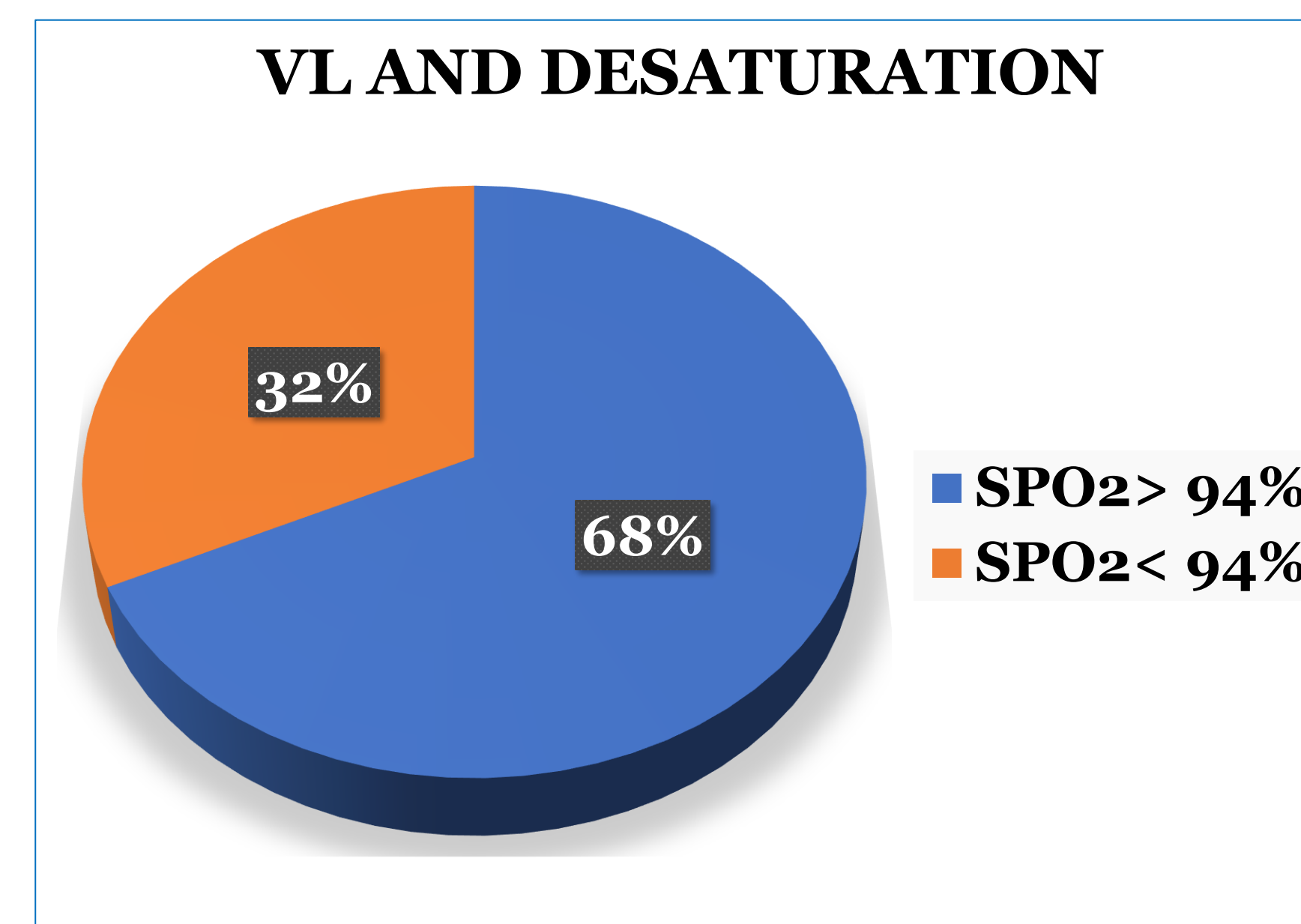
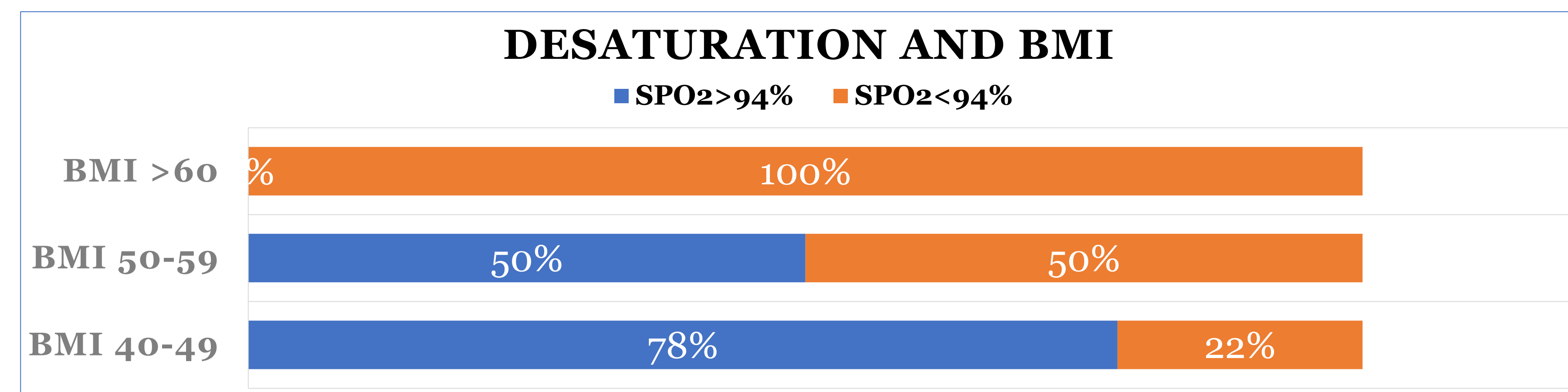
Results:

- The mean (SD) BMI in the cohort was 44.2 (6.2) kg. m⁻² whilst the mean age was 30.6 (5.8) years.
- A BMI 40-49 kg.m⁻² was recorded in 51 (91.1%), 50-59 kg.m⁻² in 4 (7.1%) whilst > 60kg.m⁻² was recorded in 1 (1.8%)
- GA was administered to 26 (46.4%), 15 (26.8%) and 15 (26.8%) for category (Cat) 1, 2-3 and 4 CDs respectively.
- Propofol as induction agent was utilised in 44 (78.6%), opioid pre-delivery in 29 (51.8%), whilst rocuronium use was documented in 38 (67.9%) women.
- No cases of failed intubation or can't-intubate, can't oxygenate were observed in our cohort.
- Difficult intubation was recorded in one (1.8%; 95%CI 0.0, 9.6) woman having Cat 1 CD.

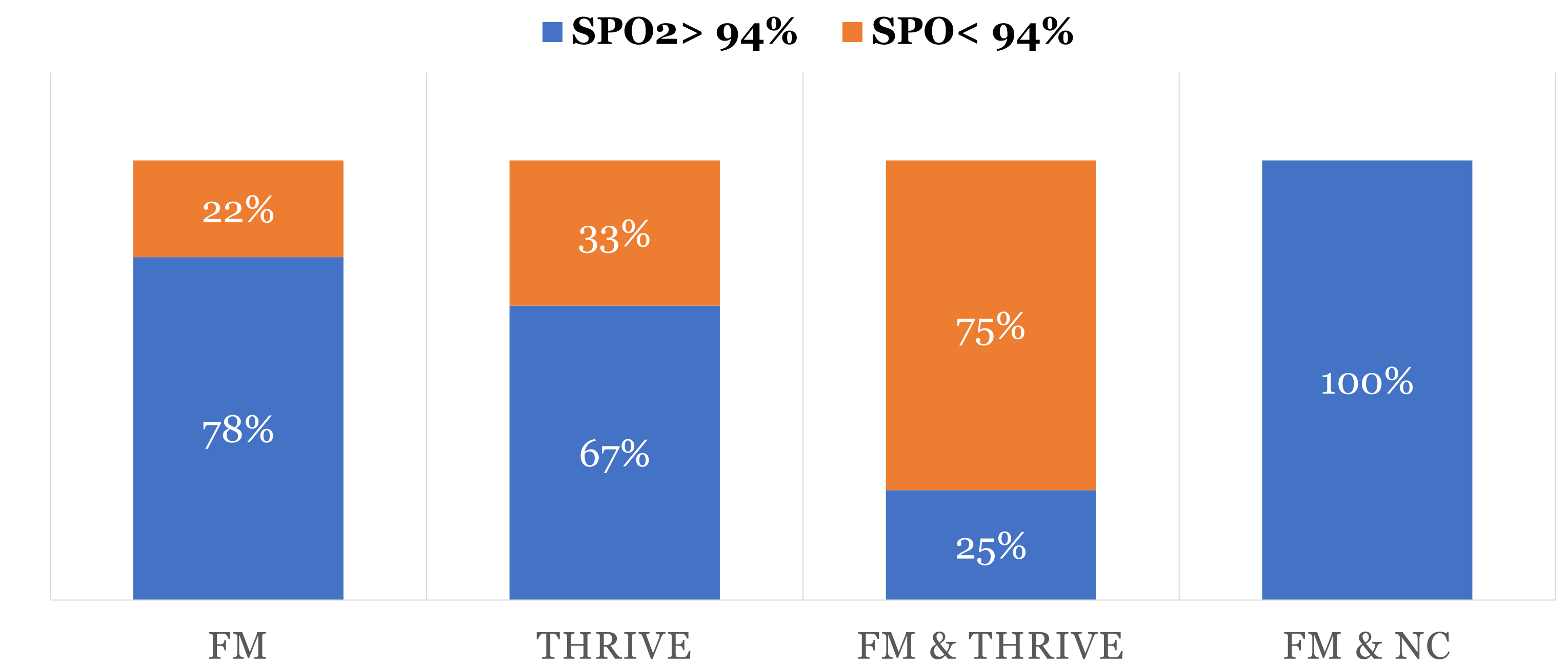
References:

- Chu SY, Kim SY, Schmid CH, et al. Maternal obesity and risk of cesarean delivery: a meta-analysis. *Obes Rev* 2007; 8:385–94. <https://doi.org/10.1111/j.1467-789X.2007.00397.x>
- Reale SC, Bauer ME, Klumpner TT et al; Multicenter Perioperative Outcomes Group Collaborators. Frequency and Risk Factors for Difficult Intubation in Women Undergoing General Anesthesia for Cesarean Delivery: A Multicenter Retrospective Cohort Analysis. *Anesthesiology* 2022; 136:697-708. doi: 10.1097/ALN.0000000000004173

Category CD	Cat 4 (n=15)	Cat 2-3 (n=15)	Cat 1 (n=26)	P-value
Face Mask (FM)	10 (66.7)	12 (80.0)	24 (92.3)	0.039 ^t
FM + Thrive	2 (13.3)	1 (6.7)	1 (3.8)	0.80
Thrive only	1 (6.7)	1 (6.7)	1 (3.8)	>0.999
FM + nasal cannula (NC 10-15l/min)	1 (6.7)	1 (6.7)	0 (0.0)	0.29
SpO₂ < 94% pre-intubation	7 (46.7)	1 (6.7)	6 (23.1)	0.039
Video-laryngoscopy usage	13 (86.7)	12 (80.0)	12 (46.2)	0.0055 ^t
Difficult intubation	0 (0.0)	0 (0.0)	1 (3.8)	>0.999
Failed intubation	0 (0.0)	0 (0.0)	0 (0.0)	>0.999



PRE-OXYGENATION AND DESATURATION



Discussion:

- Our findings indicate that desaturation was observed in 25% (95%CI 14.4, 38.4) of women with class 3 obesity.
- Face mask oxygenation technique was the most employed technique for pre-oxygenation.
- Difficult intubation incidence during GA for CD was 1 in 56 in women with class 3 obesity, which is in line with that reported in the literature.²
- Face mask-only oxygenation technique use significantly increased whilst video-laryngoscopy use declined as urgency of CD increased.
- Significant variations in the pre-oxygenation and the anaesthetic technique are common in women with class 3 obesity.
- Propofol use was associated with lower risk of desaturation in women with class 3 obesity.
- Standardising the GA technique in women with class 3 obesity may be useful to decrease airway complications and enhance preparedness in managing difficult intubation in this cohort.



Scan me!