



A RETROSPECTIVE ANALYSIS OF THE INTRODUCTION OF SUGAMMADEX ON THE INCIDENCE OF RESPIRATORY FAILURE AFTER BARIATRIC SURGERY

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Background

Since 2008 rocuronium and TOF have been continuously used on morbidly obese patients during laparoscopic surgery, to create sufficient workspace.

Sugammadex has been available since March 2009. Before this, 90% of neuromuscular blockades were reversed with neostigmine when clinically required. Since March 2009 sugammadex has been given by TOF measurements < 3 in 60% of patients.

Methods

A retrospective observational study included all patients who presented for gastric bypass surgery between 2008 and 2011.

1600 consecutive laparoscopic gastric bypass operations before March 2009, and 1600 after March 2009 were analyzed for the occurrence of post-operative respiratory failure in the first two days.

•Respiratory failure was diagnosed as:

- ✓ *need for reintubation,*
- ✓ *use of CPAP in patients without OSAS*
- ✓ *need for non-invasive ventilation support*
- ✓ *diagnosis of post-operative hypercarbia.*

The incidence of respiratory failure before and after March 2009 was compared using a Pearson's chi-square analysis. The hospital ethical committee approved the analysis. All gastric bypass operations were included, as well as re-interventions.

Both groups were controlled for the incidence of pre-operative co-morbidity such as diabetes, hypertension, respiratory disease and former bariatric surgery, and for age, sex and BMI.

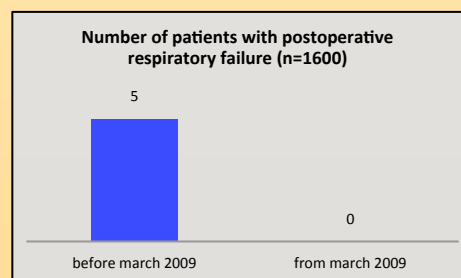
Results

Preceding March 2009, 9 cases of respiratory failure requiring admission to the intensive care unit were recorded:

- ✓ *one patient with severe bilateral atelectasis needing 3 days of oxygen therapy.*
- ✓ *three patients received CPAP mask therapy,*
- ✓ *three patients with carbonarose required re-intubation and ventilation,*
- ✓ *two patients needed non-invasive mask ventilation.*

After March 2009 **no** patients with respiratory failure were diagnosed.

The chi-square analysis was significant ($p = 0,0249$). Both groups were comparable for age and BMI, hypertension, and respiratory disease. The second group contained more males, reinterventions and diabetici.



Discussion

Although the male patient population increased over this 4-year period, the BMI stayed comparable. This is probably due to the increased number of repeat surgeries in less obese patients.

The incidence of post-operative respiratory failure dropped to zero. The use of sugammadex and the fact that more attention has been given to full decararisation of 90% TOF, explains the better results post March 2009.

Conclusion

Since March 2009 the availability and use of sugammadex has made 90% TOF possibly in every morbidly obese patient, eliminating the incidence of post-operative respiratory failure.