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A150 - Incidence of persistent ventilation following emergency laparotomy - admission to an intensive care unit over 2 years

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Introduction:

After surgery it is usual to awaken the patient and remove their artificial airway. There are some circumstances where persistent ventilation (PV) is continued. Data is limited to guide decision-making. Clinicians will choose not to extubate on the assumption that benefits outweigh the risks. Our hypothesis is that this strategy remains uncertain, with risks being potentially significant(1).

Methods:

Our site, like most hospitals in the UK, submits data to National Emergency Laparotomy Audit. These were cross referenced with WardWatcher and ICCA, collated in Excel and analysed with GraphPad. Analyses were retrospective and did not include paper notes.

Results:

In a two year period 274 patients had surgery with data in the NELA database, 195 were admitted to ICU. Of these admissions 54 received PV (28%). Duration of ventilation was short, median 2 days. Hospital length of stay was significantly longer in PV (median 21.5 days vs 11.0 (p < 0.0001)). The PV group were sicker, with lower pH, higher lactate, higher dosing of vasopressor infusions and higher APACHE II score. 31% met criteria for moderate or severe ARDS. Receipt of blood transfusion (13%) and vasopressors (93%) were common.

Conclusion:

There no guidelines to inform decisions about PV following emergency laparotomy. Perhaps the most robust indication for PV is significantly impaired oxygenation or inadequate ventilation. Patients arriving out of hours were more likely to remain ventilated, the risks of extubation may not be greater(2). Adverse outcomes in the PV group are likely to be influenced by the reasons for PV, however it's conceivable that *in itself* PV could have a significant influence on outcome, and deserves further study.

References:

- 1.Nabozny et al. 2016. Trajectories and Prognosis of Older Patients Who Have Prolonged Mechanical Ventilation after High-Risk Surgery. Critical care medicine 44:1091.
- 2.Krebs et al. 2019. Is Routine Extubation Overnight Safe in Cardiac Surgery Patients? HHS Public Access. J Thorac Cardiovasc Surg 157:1533–1542.

Table:

	All patients (n = 195)	Persistent ventilation (n=54)	Self - ventilating (n=141)
Age, mean (SD)	66.7 (15.21)	68.8 (13.8)	65.9 (15.83)
APACHE II score, median, (IQR)	12.0 (6)	13.0 (10.5-16)	12 (9-14)
pH, median, (IQR)	7.36 (0.09)	7.32 (7.25-7.36)	7.37 (7.33-7.44)
Lactate, median (IQR)	1.1 (1.0)	1.5 (1.0-3.025)	1 (0.1-1.6)

Noradrenaline dose (mcg/kg/min), median, (IQR)	0.11 (0.24)	0.18 (0.08-0.48)	0 (0.00-0.03)
Hospital LOS, median (IQR)	12.0 (14.0)	21.5 (12-33.25)	11.0 (7-16)
Moderate/ Severe ARDS, number (%)		17 (31%)	

Table demonstrating patient characteristics