

## Pain on IV Cannulation or After a Small Dose of Propofol do Not Predict Postoperative Opioid Requirements

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In an effort to optimise post-operative analgesia we have used calculated effect site fentanyl concentrations (Ce-fent) as a marker of opioid requirement to explore the relationship between intraoperative opioid dosing and post-operative requirements. A recent study {Persson:2015ki} described an association between pain on injection of a small dose of propofol and morphine requirements in PACU.

The aim of this study was to explore the relationship between the response to a preoperative noxious stimulus and PACU Ce-fent.

**Methods:** NZ HDEC Ethics review. Subjects were ASA 1-3 patients booked for elective laparoscopic surgery. IV cannula inserted and 3ml propofol administered. Pain after iv insertion and after propofol recorded using a 100mm visual analogue scale and the maximum taken as the preoperative value. Conduct of anaesthesia at discretion of primary clinician, with fentanyl as only opioid used. All drug doses in the OR and PACU recorded and Ce-fent calculated over time. In PACU pain scores recorded along with time to first analgesia. We extracted Ce-fent at various time points, including on reaching PACU discharge criteria. Correlations were explored using the slope of the best fit linear regression line.

**Results:** 60 subjects recruited. 49F, 11M. 40 undergoing a range of laparoscopic gynaecological surgery. 14 ASA1, 29 ASA 2, 9 ASA 3. Mean (SD) age 50.5 (17.4)yr, BMI 28.2 (6.2) kg.m<sup>-2</sup>.

Highest preop VAS was (median [quartiles]) 27 [9, 51]. Mean intraoperative Ce-fent 1.4 [1.1, 1.6] ng/ml. Ce-fent on PACU arrival 0.84 [0.64, 1.07] ng/ml. Time to first opioid in PACU 27 [15, 51] min. Highest PACU pain VAS 52 [22, 70]. Discharge Ce-fent 0.76 [0.57, 0.93] ng/ml.

We found no correlation between the highest preoperative VAS and time to first opioid in PACU (95%CI of regression line slope -0.19 to 0.39), highest PACU VAS (-0.014 to 0.643) or Ce-fent at PACU discharge (-0.0018 to 0.0034).

There was no difference in PACU discharge Ce-fent or highest PACU VAS pain scores between subjects in the upper quartile of preop VAS and the remainder of subjects. (Mann-Witney test p=0.17 and p=0.34 respectively)

We did find an association between mean intraoperative Ce-fent and PACU discharge Ce-fent (95%CI slope 0.13 to 0.42).

**Discussion:** In this small study we were unable to demonstrate that pain on iv cannulation or on injection of a small dose of propofol reliably predicts postoperative analgesic requirements. As previously, we found a correlation between intraoperative and PACU Ce-fent.