**Title**

The use of Penthrox in procedural pain

**Background**

Penthrox is a self-administered inhalation device, delivered through a hand held Penthrox inhaler containing 3 ml of methoxyflurane 99.9%. Rapid analgesia is obtained after 6-10 inhalations. Continuous inhalation of a bottle containing 3 ml provides analgesic relief for up to 25-30 minutes, longer if used intermittently. Up to 2 inhalers can be used during one painful episode.

Penthrox has been used for many years in the emergency and trauma fields as a rapid onset analgesic. It is intended to reduce the severity of pain rather than stop it completely.

Although there is currently no UK license for procedural pain, in other countries such as Australia it is also licensed for procedural pain management showing rapid onset of analgesia, highly rated by patients and well tolerated.

In our organisation, although we have Entonox readily available, we identified a need within groups of patients, particularly those needing perineal/perianal dressing changes, who were 24 hours post-surgery or with dehisced wounds.

Entonox has limitations in hospital, e.g. use in isolated patients, rapid access to gas and disposables. And without a PGD in our organisation, the use of Entonox is often overlooked due to these logistics.

We decided there may be a place for Penthrox instead and began an audit.

**Aim and Objectives**

To establish if Penthrox has a place in improving the management of challenging procedural pain in place of Entonox and establish patient satisfaction of this product.

**Methods**

We designed a data collection tool containing specific questions to be asked pre, during and post use of Penthrox inhalation device during procedures. The data was collected prospectively by the pain management nurse specialists during procedures to ensure accuracy of data. All patients were on medical or surgical wards and received Penthrox during wound dressings.

**Main results**

Data was collected for N=4 patients, none were excluded from the analysis.

No complications or side effects were identified during use.

All 4 patients only needed to use 1 Penthrox device per procedure.

100% of patients needed to cover the charcoal filter for a stronger analgesic effect.

3 out of 4 patients were administered pre-procedure analgesia and only 1 required breakthrough analgesia during the procedure.

1 patient required post-procedure analgesia, however the procedure could not be completed due to complications of the surgical wound.

Patient satisfaction was 9/10 in 3 patients, however the patient who couldn’t complete the procedure did not give a rating.

**Conclusions**

Penthrox provided a safe and effective method of managing procedural pain. Patients felt it was easy to use and provided rapid onset analgesia with minimal side effects reported.

Training was easy for the nurses and their feedback was a preference in ease of use compared to Entonox.

The promotion of the use of Penthrox in our organisation remains ongoing. To date we have only collected data for 4 patients to date, however this ‘anecdotal’ evidence has all been positive and overall highly rated by our patients. We continue to collect further data and will consider the use of this device in the outpatient setting once we have collated more data.