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The Pennine Acute Hospitals NHS
NHS Trust

Pennine Acute Hospital Trust.

Internal trial of ENTONOX® use and acceptance in Endoscopy.

BOC: Living healthcare

Rochdale Endoscopy Unit.
Sue Saxon, Nurse Endoscopist.

This study was designed as an internal trial purely to meet the specific needs of the Pennine Acute Hospital Trust and not for external clinical research publication. The trial was established in order to audit patient acceptance, satisfaction and outcomes within Rochdale endoscopy unit before deciding to implement ENTONOX introduction across all Pennine Acute Hospital Trust endoscopy units.

BOC was chosen as the supplier of the product. They did not act as the sponsor of the trial, but provided assistance to the Endoscopy Unit with advice on administration of the gas and cylinder handling.

Rationale

Entonox is a 50/50% mix of nitrous oxide and oxygen.

- It is an excellent analgesic agent used in lower endoscopy.
- It is used widely across the UK in endoscopy.

Trial preparation

A BOC representative visited the site, assessed procedure theatres, and provided staff training on:
- ENTONOX administration.
- Effects/side effects/contraindications.
- Guidelines for use.

Endoscopy staff were given training on patient eligibility, check list and audit documentation. BOC supplied the required demand valve/gas cylinders for trial purposes.

Date of trial was agreed with endoscopy staff:
- Nov 2012 for a 6 week period.

Patient selection

The following factors were evaluated in the patient group prior to selection:
- If patients had a previous colonoscopy.
- Patient's eligibility – based on contraindications.
- Patients eligible who then accepted or refused ENTONOX for their colonoscopy.

Evaluation metrics

- Patient comments.
- Patient satisfaction.
- Staff observation/comments.
- Endoscopist observations/comments.

Patient involvement

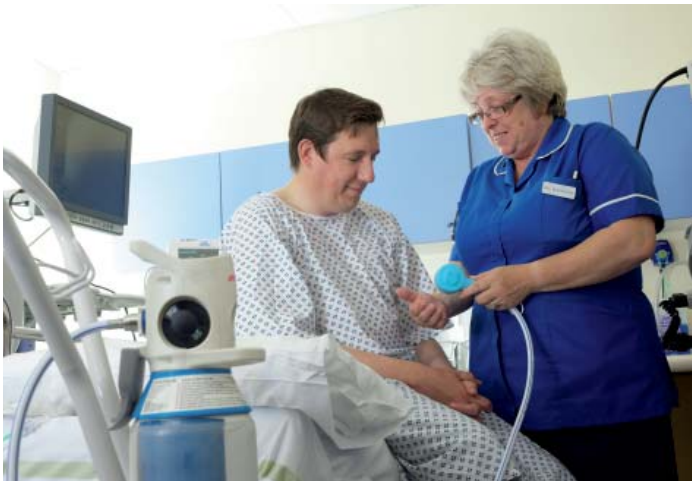
Patients invited for colonoscopy from Nov 2012 were sent information on the use of ENTONOX in colonoscopy along with information on the trial and an invitation to participate (9 patients who chose not to participate in the trial stated they did not receive information).

Patients at admission were pre-assessed for their suitability for ENTONOX inhalation against 14 contraindications.

If NO contraindications were identified, patients were offered the use of ENTONOX for their colonoscopy.

Patient sample group

- 156 patients were initially selected to be offered participation in the trial, prior to pre-assessment.
- Age range 22–80 years.
- Female 62 = 40%.
- Male 94 = 60%.



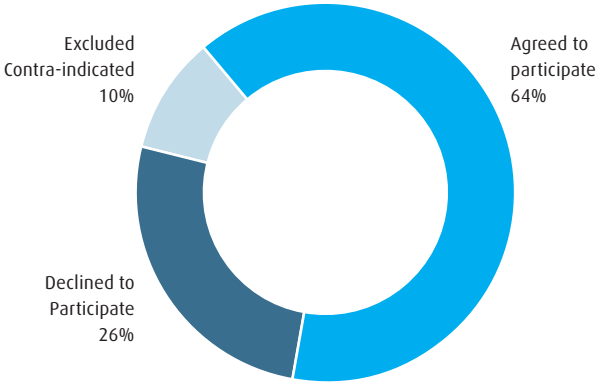
Contraindications

Of the 156 patients selected, 16 patients were found to have contraindications to the inhalation of ENTONOX and were excluded after assessment, leaving a sample of 140 patients:

8 = Middle ear occlusion/previous ear operation.

3 = Previous spontaneous pneumothorax.

6 = Severe COPD/Asthma (Oxygen SAT scores of below 94%, target recommended by Dr A Khan, respiratory consultant & clinical director respiratory for Pennine Acute Trust).



Characteristics of the Patient Group selected for trial

	Previously had Colonoscopy				No Previous Colonoscopy				Total
	Male	Female	Gender unknown	Sub Total	Male	Female	Gender unknown	Sub Total	Patients
No. Patients	41	28	3	72	35	31	2	68	140
Accepted	33	11	3	47	28	24	2	54	101
Refused	8	17		25	7	7		14	39

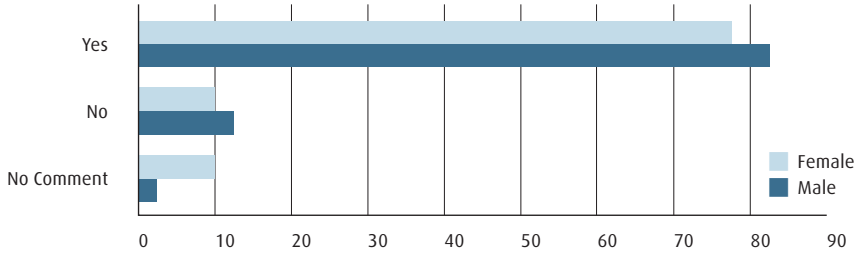
Patient's reasons given for refusal

- Used it in labour and didn't like it.
- Prefer to be put to sleep.
- Don't want to be part of the experiment.
- Used it before and it made me feel sick.
- Frightened of feeling any pain so prefer to have the sedation to put me to sleep.

Trial evaluation results

Patient Satisfaction

Would the patient use ENTONOX again?



The majority of patients involved in the trial were satisfied with ENTONOX and said they would be prepared to use it again for a Colonoscopy.

There was no statistical difference between genders.

Observations

Staff

- Patients felt in control of their own analgesia during procedure.
- Recovery time of patients after ENTONOX inhalation reduced to approx 5–15 mins.
- Observations were within patients' normal parameters.
- Patients not drowsy, were able to get off trolley and mobilise on admission to the recovery area.
- Patients comfortable, were able to disperse wind easily/quickly due to early mobilisation.
- Patients happy, they could resume normal daily activities without restrictions (eg drive, not having to organise escort home, 24hr care).
- Positive patient feedback.

Endoscopists

- Patient comfortable, reduced anxiety.
- No interference of procedure.
- Convenient and simple to use for the patient.
- Fully support its implementation for endoscopy across PAHT.
- The need for alternative if patient requires.
- Instruct patients in normal inhalation to prevent excessive abdominal movement.

Other

- Prevented 1 patient admission for 24hr overnight care at cost of £320.

Conclusions

This internal trial successfully demonstrated sufficient patient and staff satisfaction with ENTONOX analgesia for colonoscopy procedures.

The majority of patients were satisfied with the use of ENTONOX during the procedure and would be happy to use this form of analgesia again.

The use of ENTONOX analgesia provides advantages for the Trust in terms of faster patient turnaround and reduced costs in respect to potential overnight admissions.

The Trust will now:

- Develop a Patient Group Directive/protocol for use of ENTONOX in Endoscopy.
- Train all Endoscopy unit staff in the administration of ENTONOX with the assistance of BOC Healthcare.
- Implement the use of ENTONOX for patients undergoing colonoscopy/flexi-sig within PAHT.

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