Topical anaesthesia in upper gastrointestinal endoscopy

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BMJ 1991;**303**:695

Most upper gastrointestinal endoscopy in Britain is performed in sedated patients[1] and the need for topical pharyngeal anaesthesia is not established—some studies showing benefit,[2] others not.[3] This uncertainty is reflected in clinical practice, a recent postal survey showing that 63% of endoscopists use pharyngeal anaesthesia regularly, 20% not at all, and the rest sometimes.[1] We have tested the value of pharyngeal anaesthesia in a double blind placebo controlled study in patients sedated with intravenous midazolam having upper gastrointestinal endoscopy.

Patients, methods, and results

One hundred consecutive patients having upper gastrointestinal endoscopy were randomised to receive either a 15% lignocaine solution or placebo sprayed on to the pharynx just before endoscopy. The two test solutions had the same taste. Six spray devices were used, three containing lignocaine and three placebo, to ensure that the endoscopist would not identify them. Four sprays were given to each patient, delivering a total of around 80 mg lignocaine to those receiving active treatment. All endoscopies were performed by the same experienced endoscopist, aided by the same endoscopy sister, using either an Olympus GIF Q10 or GIF PQ20 endoscope.

After applying the pharyngeal spray the endoscopist gave intravenous midazolam sufficient to cause dysarthria and sedation. The same assistant recorded the duration of the procedure and the number of times the patient gagged and coughed during the procedure. After it was over the endoscopist, sister, and patient independently recorded their assessment of how well the patient had tolerated the procedure by using a five point scale: 1="did not feel a thing," 2=well, 3=fair, 4=poor, 5=unable to tolerate. In addition, the endoscopist and sister independently recorded the ease of intubation as 1=effortless, 2=easy, 3=fair, 4=difficult, 5=very difficult.

The two groups of patients were similar in sex distribution, age, dose of midazolam, endoscope used, duration of the procedure, and gag and cough count (see table). Only one patient (who received placebo) found the procedure unpleasant. The rest "did not feel a thing." The endoscopist's and sister's assessments of the patients' tolerance of the procedure and ease of intubation were similar in the two groups, and one way analysis of variance showed no significant differences (ease of intubation: $F=0{\cdot}402$, $p=0{\cdot}755$; tolerance of procedure: $F=0{\cdot}164$, $p=0{\cdot}920$). There was good correlation between the independent assessments of the endoscopist and sister (lignocaine group: $r=0{\cdot}519$, $p<0{\cdot}001$; placebo group: $r=0{\cdot}581$, $p<0{\cdot}001$).

Details of patients in lignocaine and placebo groups and scores given by endoscopist and endoscopy sister

	Lignocaine	Placebo
Sex (male/female)	22/28	24/26
Mean age (range) (years)	55 (20-83)	59 (29-82)
Mean dose of midazolam (range) (mg)	8·1 (4-10)	8·0 (4-10)
Mean duration of procedure (range) (min)	4·4 (2-9·0)	4·7 (1-9·5)
Mean gag/cough count (range)	8·3 (0-50)	8·9 (0-47)
Endoscope used:		
Patients examined with GIF Q10	20	29
Patients examined with GIF PQ20	30	21
Mean endoscopist's score (SEM):		
Ease of intubation	2·00 (0·121)	1·94 (0·112)
Tolerance of endoscopy	2·00 (0·118)	1·98 (0·141)
Mean endoscopy sister's score (SEM):		
Ease of intubation	1·94 (0·083)	2·08 (0·098)
Tolerance of endoscopy	1·98 (0·088)	2·08 (0·117)

Comment

These results confirm how well tolerated upper gastrointestinal endoscopy can be when patients are well sedated with intravenous midazolam. Careful study by the endoscopist and endoscopy sister of the ease of intubation and patient comfort showed no benefit whatsoever of premedication with topical pharyngeal lignocaine. The use of lignocaine carries potential hazard—for example, methaemoglobinaemia[4]—and the resulting cyanosis might be misinterpreted as hypoxaemia due to hypoventilation. There may also be an increased risk of aspiration with the pharynx anaesthetised. Other risks include that to the ozone layer as the commercially available lignocaine spray contains chlorinated fluorocarbons.

When intravenous sedation has been given topical pharyngeal anaesthesia with lignocaine before upper gastrointestinal endoscopy is of no benefit and should not be used.

We thank the pharmacy staff of Peterborough District Hospital for their invaluable help.

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3 Cantor DS, Baldridge ET. Premedication with meperidine and diazepam for upper gastrointestinal endoscopy precludes the need for topical anesthesia. *Gastrointest Endosc* 1986;**32**:339-41.
4 O'Donohue WJ Jr, Moss LM, Angelillo VA. Acute methemoglobinemia induced by topical benzocaine and lidocaine. *Arch Intern Med* 1980;**140**:1508-9.

(Accepted 24 May 1991)