Management of Patients Before, During and After Upper Gastrointestinal Endoscopy

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Introduction

For many people the idea of having a long, thin, flexible telescope inserted down one's upper alimentary tract is not one to be savoured. Common anxieties of a patient leading up to an upper gastrointestinal (GI) endoscopy may include:

(i) Is the procedure painful?
(ii) Can I swallow or breathe?
(iii) Will there be throat discomfort?
(iv) What if I gag or cough?
(v) Will I wake up?

It has been noticed that patients having a repeat endoscopy tends to be more relaxed and often require less sedation. Furthermore, less sedation is required for the novices if their anxieties are allayed by careful explanation of the impending procedure. However this does not mean that sedation is unnecessary.

Topical pharyngeal anaesthesia

A recent review suggested using topical pharyngeal anaesthesia only in patients who prefer to be endoscoped without sedation. Topical anaesthesia was also found to be unnecessary in sedated patients in a subsequent study. However the mean (range) dose of midazolam given to patients in this study was 8 mg (4-10). Using a lower dose of midazolam (mean dose = 5.2 mg ± 0.5 (2SEM), lignocaine spray was found to improve patient's toleration of upper GI endoscopy, the optimal dose of lignocaine being 100 mg.

"To Sedate or Not To Sedate, That is the Question."

The term 'conscious sedation' has been coined to describe the state of sedation imparted upon patients undergoing procedures like endoscopy. The patients are lightly sedated but awake, cooperative on demand, amnesic and free from anxiety or fear. The fact that upper GI endoscopy can be done without sedation, does not mean that this is the preferred method. Who best to ask about their preference for sedation but patients who have had previous endoscopy. In such a study, most patients chose to be sedated. The proportion wishing to be sedated did not differ significantly between new (81%) and follow-up (75%) patients.

Cultural expectations may also play a part. While in countries like Germany and Japan, patients for outpatient endoscopy might expect not to be given sedation, this is not so for their counterparts in the UK or USA.

On the other hand, the advantages of not using sedation are obvious:

(i) lower risk of aspiration
(ii) lower risk of hypoxia from hypoventilation
(iii) no need for recovery space
(iv) no need for nursing time and effort in observing sedated patients
(v) no need for patients to be accompanied
(vi) no need for sick leave
(vii) no need for another clinic appointment

Therefore the ideal solution would be to offer patients the choice as to whether or not they wish to be sedated prior to a routine upper GI endoscopy.

Which sedative agent?

Over the course of time, various agents have been used for sedation during endoscopy. However the main
agents used nowadays are benzodiazepines because of their profound amnesic and anxiolytic properties, their low dose-effect curve and their minimal effects on the cardiovascular system. The 2 most widely used benzodiazepines for sedation in endoscopy are diazepam and midazolam. Diazemuls is the emulsified form of diazepam and is less irritant to the veins. Both drugs have equally rapid onset of action but the recovery period is prolonged with diazepam as it has a longer elimination half-life (20 to 70 hours vs 1.5 to 5 hours) and its metabolites are also active. Midazolam also has a superior amnesic effect to that of diazepam (60 to 96% vs 7 to 73%) and its superior nature of midazolam to diazepam was also borne out when patients were asked to assess their experience.

The role of opiates

The addition of opiates to benzodiazepines given to patients undergoing endoscopy not only confers analgesia but also improves patient tolerability in that the patient gagged and choked less. Benzodiazepine-opiate combinations produce a greater degree of oxygen desaturation than either agent alone. Thirteen percent of British endoscopists routinely use an opiate (55% Pethidine) in addition to a benzodiazepine for upper GI endoscopy. This group of endoscopists reported statistically more adverse events, such as respiratory depression and death. It is one author's opinion that for simple upper GI endoscopy, as opposed to ERCP, it is unnecessary to use an opiate as well as a benzodiazepine to sedate the patient.

Reversal agents

Until recently one of the disadvantages of using benzodiazepines to sedate patients was the fact that, unlike opiates, they were not blessed with a specific antidote, like naloxone. However flumazenil changed all that. It is a competitive antagonist of benzodiazepines at the receptor level and it specifically blocks their central effects. It works within 60s after an intravenous dose and has a short mean elimination half-life of about 50 minutes. However it takes a longer time to reverse the respiratory depression.

Anticholinergics

In a nationwide survey, only 23% of British endoscopists use anticholinergics routinely in their premedication. Atropine has theoretical advantages of reducing salivary secretions, inhibiting gastric motility and protection from vagally induced arrhythmias. However these have not been borne out in 2 studies looking at ease and tolerance of procedure and frequency of arrhythmias.

Recommendations

Upper GI endoscopy is generally regarded as a very safe procedure, but there are potential pitfalls, particularly when examining ‘at risk’ patients. Based on the local scenario and resources, I would like to make the following recommendations:

(i) Pre-procedure assessment of all ‘at risk’ patients
(ii) Close monitoring of ‘at risk’ patients during and after the procedure, clinically and with pulse oximeter and ECG
(iii) Prophylactic use of supplemental oxygen in all ‘at risk’ cases.
(iv) Endoscopists and their assistants trained in resuscitation techniques

(v) Reversal agents, i.e. naloxone and flumazenil, readily available

(vi) Intravenous access

References


