Research Paper

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A Comparative Study of Propofol and Midazolam As Sedative For Upper Gastrointestinal Endoscopy

Medical Science

KEYWORDS : propofol, midazolam, upper GI SCOPY

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ABSTRACT

The aim of this study was to compare propofol and midazolam for conscious sedation during upper GI scopy with respect to quality of sedation, safety and recovery profile along with the satisfaction of endoscopist. 60 adult patient of ASA grade 1 & 2 scheduled for upper GI scopy were receive sedation with either propofol (n=30) or midazolam(n=30). The changes in HR, BP, SPO2 and procedure discomfort was comparable in both the group. 93% in propofol group and had a sedation score of 3-4 as compared to 74% in midazolam group (p<0.03). Mean recovery score was higher at 5min in propofol group than midazolam group. The endoscopist satisfaction was significantly higher in propofol group compared to the midazolam group. We concluded that propofol is a suitable and safe alternative to midazolam as it had a rapid onset, quick and clear headed recovery as well as higher endoscopist satisfaction.

INTRODUCTION

- Gastroscopy has been popularized for various diagnostic and therapeutic procedure in different specialty. It is also superior over radiological diagnostic procedure for upper GI tract examination.
- Previously it was performed in awake patient(means without sedation), but with changing concept and availability of superior and better drugs, sedation has now become an integral part of procedure.
- The use of intravenous benzodiazepines with or without opioids has been the standard practice for undertaking endoscopic procedure for many year, but it does not provide adequate patient's comfort. Now propofol is becoming attractive choice for conscious sedation during endoscopy due to its ideal pharmacokinetic profile for sedation and so we compared the propofol with midazolam for quality of sedation, safety profile, and endoscopist satisfaction in upper GI endoscopy.

MATERIAL AND METHODES

- Conducted at S.C.L. hospital.
- 60 adult patient of ASA grade I/II scheduled for upper GI scopy were included and divided into 2 groups. Group1(n=30) were given inj. propofol and group 2(n=30) were given inj. Midazolam as per drug protocol.(DRUG PROTOCOL- inj. Propofol 10mg every 10second and inj midazolam 0.5mg every 15 second, further increments of both the drug were titrated to achieve adequate sedation like drowsy but able to swallow on command.)
- Exclusion criteria: pregnant, morbidly obese, patient with history of lipid allergy.
- All patient were preoperatively assessed day before procedure, procedure was explained and informed consent was taken.
- HR, BP, RR, SPO2, were monitored every 2minutes.
- Patient were taken in OT, vital parameter checked, IV line started, sedation were given as per drug protocol.
- Level of sedation was graded as 5 point scale: 1) awake, 2) drowsy, 3) arousal on command,4) arousal on to stimulus and 5) not arousal.
- Endoscopist satisfaction score were graded as 10 point verbal score.
- Recovery score was assessed by Steward score

SCORE	CONSIOSNESS	AIRWAY FUNCTION	MOTOR
2	AWAKE	COUGH ON COMMAND	CONTROL OF EXTREMITIES
1	AROUSALBY STIMULUS	BREATHES INDEPENDANTLY	UNCONTROLABLE MOVEMENT
0	NOT AROUSAL	AIRWAY REMAIN OPEN	NO MOVEMENT

OBSERVATIONS AND RESULTS

Table 1 : DEMOGRAPHIC DATA

	PROPOFOL (N=30)	MIDAZOLAM (N=30)	P VALUE
AGE	38.6 ±10.3	39.23 ±10.1	0.79
MALE/FEMALE	21/9	19/11	
ASA - I/II	20/10	19/11	0.81
DURATION OF PROCEDURE	10(8-12)	10(8-12)	0.69
DRUG DOSE	75mg (40-150)	3mg (1-3.5)	

Table 2 : SEADATION SCORE, ENDOSCOPIST SATISFACTION, PATIENT'S DISCOMFORT,AND POST ANAESTHESIA RECOVERY SCORE

	PROPOFOL (N=30)	MIDAZOLAM (N=30)	P VALUE
Sedation score (1/2/3/4/5)	0/3/17/10/0	3/5/14/8/0	0.01
Patient's discomfort (none/some/excessive)	24/6/0	18/8/4	0.03
Endoscopist satisfaction (verbal ranging score)	8.62±0.91	7± 1.06	0.02
Recovery score(steward score)	5.43± 0.82	4.8±1.03	0.003
Time of discharge (median)	20min	40min	0.01

DISCUSSION

- Conscious and moderate sedation is a state that allows patients to tolerate unpleasant procedure(diagnostic or therapeutic) with minimal or no discomfort while maintaining ability to respond purposefully to verbal commands or tactile stimulation.
- There were mild hypotension and bradycardia after given propofol but it was not significant. Propofol provide rapid onset and offset of sedation, fast recovery, and normalization of neuropsychiatric function(1,2).
- Sedation score(3-4) with propofol was higher then midazolam and sedation was achieved more consistently and frequently in propofol group(3,4,5).
- Satisfaction of endoscopist and patient were more with propofol. Propofol provide adequate control of anxiety, pain improves discomfort, reduces risk of physical injury and

confer sufficient amnesia(6,7,8). The endoscopist prefer propofol over midazolam due to its faster onset, optimal endoscopy condition, less gagging reflex, and rapid recovery(3,5,7,).

CONCLUSION

In conclusion, our findings indicate that for short duration upper GI endoscopy, propofol is a suitable choice as the duration of action corresponds well to that of procedure. The additional benefits are rapid onset, quick and clear headed recovery, less discomfort and higher level of endoscopist satisfaction along with acceptable safety profile. However dose monitoring, titration of dosage and avaibility of o2 and resuscitation equipment are mandatory.

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