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Research Article

**PRACTICE RECOMMENDATIONS FOR THE USE OF
SEDATION IN ROUTINE HOSPITAL- BASED
COLONOSCOPY**¹Dr Qurat-Ul-Ain, ²Dr Haseeb Afzal, ³Dr Nimra Suhail.^{1,2}MBBS, Ameer-u-din Medical College, Lahore.³WMO, Govt. Maternity Hospital Pathi Ground, Lahore.

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Abstract:

Introduction: Colonoscopy is a critical tool used for diagnostic tool and treatment purpose of many intestinal conditions, including colorectal cancer. **Methods:** We took 28 multidisciplinary panellists to enrolled in a modified Delphi process to develop consensus- based recommendations for the use of sedation in colonoscopy. Panel members participated in a factors assessment survey. A person to person meeting was held between voting rounds to support consensus- building. Consensus was defined as >70% contradiction was considered indicative of strong consensus. **Objective:** the objective of the study was to practice recommendations for the administration of sedation in routine hospital- based colonoscopy. **Results:** 28 panellists included in the values assessment survey. Panellists graded all factors mentioned as important to the development of practice recommendations. The factor which was taken most important was patient safety. Patient satisfaction, procedural efficiency, and cost were taken as less important. **Discussion:** The recommendations mentioned in this study were agreed on by a multidisciplinary group and give guidance for the application of sedation in regular hospital- based colonoscopy. Standardised sedation procedures will promote safe, effective, and efficient colonoscopy for all patients.

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INTRODUCTION:

Colonoscopy is a crucial diagnostic tool and treatment of many intestinal conditions, including colorectal cancer. Colonoscopy can call for early termination of the process earlier to complete colonic visualisation if the patient felt pain and discomfort and can follow to resistant to experience future plan of action (1). Before and during the procedure, patient's agitation may also be reasonable and frontier the willingness to go through colonoscopy. Therefore, to maximise the patient experience policies are necessary. Analgesia and anxiolysis during endoscopy is provided by sedation and is endorsed for most patients experiencing colonoscopy (2).

Commonly average sedation is administered with the combination of fentanyl and midazolam, and often given by an endoscopist and observed by a nurse, with no additional healthcare providers required. At this sedation level patients are awoken with slight tactile stimulation (3).

In contrary, deep sedation can readily amend the cardiorespiratory function and even advancement to the general anaesthesia when administered with propofol. In Ontario, propofol is administered by patients qualified to take general anaesthesia—mostly an experienced anaesthetist is answerable only for assessing the patient—even if moderate sedation with propofol is given. Painful and concurrent stimulation are required to awake the deeply sedated patients (4).

As propofol has a rapid onset of action and short plasma half- life so that for endoscopy deep sedation can be alluring, which can possibly increase procedural regulation, and is considered to be greater satisfactory than moderate sedation (5). There are huge differences in sedation execution worldwide and regionally.

In United Kingdom, approximately 12% of colonoscopies are carried out without sedation, <1% are done with propofol, and the remaining are performed with moderate sedation (6). In 2009, 14% of Canadian endoscopists delineated the administration of propofol, and mainly 60% of gastroenterologists who were not using propofol manifested the interest in its daily use, portending an increase in its popularity.

In Ontario, Canada, the use of propofol has been quickly increasing. In 2005, in Ontario, 18% of colonoscopies were done involved anaesthesia assistance; this estimation had raised to nearly 60% by 2015, although there was huge difference around institutions and regions (7). This is important as the method of sedation delivery has potential quality and safety implications. Recent

researches reported higher complexity rates in colonoscopies processed with anaesthesia, particularly aspiration. Additionally, application of anaesthesia services for colonoscopy are at a notable monetary rate (8). Given the variability in practices and the associated safety, satisfaction, and cost implications, guidelines regarding sedation for colonoscopy is necessary.

The purpose of current study was to establish consensus- based practice recommendations for the implementation of sedation in regular hospital-based colonoscopy to ease standardisation of executions.

METHODS:

A modified Delphi technique was used to establish consensus- based practice recommendations leading the use of sedation for regular hospital-based colonoscopy. A consensus- based approach was preferred as an overview of present researches revealed heterogeneous results and because this policy allowed for incorporation of values from greater prospects. A collaborative approach to attain consensus from an expert panel was the Delphi technique. Participants are firstly participants were asked to grade statements through an unacknowledged survey. The results of the group were organized and conferred to the participants, who then marked the statements again. That method of obtaining organized results and re-grading statements was carried on until consensus was appeared. The unnamed Delphi approach lessened the effects of commanding values and feedback enhanced convergence to consensus (9). The improvised Delphi technique involved an in person interview, where extra knowledge can be given and also the justifications can be made. The CREDES (Conducting and Reporting Delphi Studies) recommendations were applied in the study (10).

Purposive sampling was used to select a multidisciplinary group of 28 panellists. Our panel size represented our desire to get diverse panellists who represented a range of hospital settings, practitioners, and administrators. Physicians (gastroenterologists, general surgeons, anaesthesiologists); endoscopy nurses and managers; public representatives; experts in health economics; and international experts in endoscopy were included. Prior to participation, all the participants were asked to report disagreement of interest.

The study team first systematically reviewed current guidelines to measure the level of stability among current recommendations, to notify introductory recommendations. A less stability was found among guidelines, the team next analysed

and summed up published literature in the following regions: (1) whether the presence of an anaesthesiologist affect the safety and successfulness of colonoscopy, (2) the incidence of problems in colonoscopy carried out with propofol versus traditional sedatives, and (3) safety, satisfaction, and effective outcomes between colonoscopies done with propofol versus midazolam and fentanyl.

The outcomes of a published meta- analysis differentiating propofol with traditional sedatives were also reviewed (11). No statistically significant differences in rates of hospital admission, major complications (death, aspiration, splenic injury, myocardial infarction, stroke), polyp detection, caecal intubation, or patient satisfaction between anaesthesia and non- anaesthesia provider-administered sedation were found; however, consequences of studies showing aspiration and bleeding rates were incompatible. No alterations in cardiorespiratory events between patients sedated with propofol versus traditional sedatives were seen. With propofol versus midazolam and fentanyl there were minute improvements in patient satisfaction and recovery rate. Members of the multidisciplinary panel got copies of the summary of the evidence.

The multidisciplinary panel members participated in webinars of 2 hours, where the evidence summary was discussed in particular. Moreover, to generate a number of factors and results webinars were used that panellists felt were significant to contemplate in the organization of practice recommendations for the administration of sedation. Following the webinars, panellists got a link to an online, unbiased values assessment protocol, where they were asked to mention the significance, on a scale from 1 to 10, of each of 20 factors/results that appeared from the webinars.

Panellists visited a one- day consensus- building meeting to overview the outcomes of the values measurement survey. Data was presented to the panellists on the level of conflict for every predefined recommendation. Through large group discussions, the wording of recommendations were purified. The meeting also included the presentations by visiting experts, covering topics of conference that had raised during the webinars, and small group breakout periods.

The objective of the small group sessions were to discuss (1) patients for whom deep sedation would be favourable and (2) how to increase the experience for patients going through routine colonoscopy with average sedation. During the small and large group sessions to notes were taken to support alterations to the practice

recommendations on the basis of in person interviews.

Public representatives in the expert panel were included to supply patient and public prospects. The participants in all aspects of the study involving the expert panel, including values measurement, webinars, Delphi process, and consensus- building meeting. Feedback taken from these representatives into the recommendations provided were included.

RESULTS:

The multidisciplinary panel included 28 members, 4 anaesthesiologists, 6 endoscopists 6 gastroenterologists, 2 surgeons, 3 Cancer Care representatives, 1 public representative, 3 administrators/funders, 1 health economics experts, 1 endoscopy nurses, 1 hospital endoscopy programme managers. Three of the endoscopists were international experts.

The multidisciplinary panel considered all 20 factors/results comprised in the values evaluation survey to be considerable for the organization of practice recommendations. Factors authorised as the most significant (mean scores of 9–10 on a 10-point scale) were linked to the safety of sedatives, comprising the outcomes of death, cardiorespiratory complications, and procedural problems. Pain reported by the patients and factors related to colonoscopy quality were believed to be very important; factors related to procedural efficiency and cost were considered less important. As consensus was obtained for all recommendations presented in online voting, the person to person meeting was used to show and discuss the outcomes of voting, clarify wording of recommendations, discuss the recommendations for which greater consensus had not been obtained, and facilitate small group breakout periods.

In the first small group session, patient groups that may confer the thought for the application of deep sedation in particular situations, although it was identified that these patients and clinical contexts do not certainly direct the application of deep sedation, that is, use should be considered on a case- by- case basis. Panellists identified the patient factors that may justify the consideration for use of deep sedation in selected cases involving chronic opiate users, those who could not formerly permit colonoscopy under average sedation due to discomfort, paediatric patients, and patients with hypersensitivities to traditional sedative agents, irritable bowel syndrome, fibromyalgia, cognitive disabilities, or a history of diverticulitis.

Magnifying patient experience under average sedation. For enhancing patient experience under

moderate sedation many policies were identified by panellists. Methods advised to be undertaken preliminary to the procedure included facts enhancement courses and setting patient expectations surrounding pain/discomfort.

DISCUSSION:

By using a multidisciplinary panel and modified Delphi technique, we established seven consensus-based practice recommendations for the use of sedation in regular hospital- based colonoscopy. All endoscopists should be eligible to conduct colonoscopy under medium sedation with the support of a single expert nurse. Select patients, including those with critical comorbidities, may facilitate from deep sedation and examining by an anaesthetist; however, deep sedation should not be appointed by hospitals.

The recommendations organized in current study greatly orient with current guidelines awarded by the American Society for Gastrointestinal Endoscopy (ASGE) (12). These guidelines fortify that medium sedation can be administered by an endoscopist for most patients and that a expert nurse can both evaluate a moderately sedated patient and perform particular, interspersed activities (13). However, our recommendations conflicted from those of the ASGE in many main areas.

There may be endoscopists who have not performed colonoscopy under minimum sedation at all due to the greater administration of propofol at some hospitals, for some time who would feel anxiety doing so (14). For these individuals, skills betterment courses can be advantageous by mentioning policies to lessen patient anxiety and improve caecal intubation and adenoma diagnostic rates, such as by teaching torque steering and loop reduction, differing patient positioning to support passage of the colonoscope (15), and use of carbon dioxide insufflation (16) and water infusion techniques (17).

Additionally, recommendations were made by the super panel for refining patient experience under medium level sedation. The propofol was considered as it is thought to boast patient safety, comfort, procedural efficiency, or progress, but suggested that whether an anaesthesiologist is included administration of deep sedation for low-risk cases be recognized by state, regional, and local regulations, the ASGE document was recommended. Irrespectively, the expert panel recommended that deep sedation only be taken by anaesthesia personnel, and identified particular patient and clinical contexts, not mentioned in the ASGE document, that confer consideration for application of propofol (18). These involve selective patients with irritable bowel syndrome,

fibromyalgia, or previous diverticulitis, as well as smaller hospitals where revenue from conditioning endoscopic sedation is necessary to maintain the anaesthesiologist workforce (19). Both groups settled that when deep sedation is implemented, an individual committed to administering and assessing deep sedation, without any other responsibilities, is necessary.

The systematic reviews that enlightened our consensus- building process also mentioned different areas in which research is contradictory at present (20). Various disparities were found between present guidelines connecting to the administration of sedation (21). Our review of the safety of non- anaesthesia provider- administered sedation found differing results for the outcomes of aspiration and bleeding.

Moreover, propofol was linked with minute improvements in patient satisfaction, but it was unclear whether differences of this magnitude were clinically beneficial (22). Further studies in these aspects will be advantageous for obtaining evidence- based guidance for sedation.

Although our recommendations superimposed on hospital- based colonoscopy, the application of deep sedation has gained for other endoscopic processes, including gastroscopy and flexible sigmoidoscopy conducted in hospitals over the same period (23). Given that the role of deep sedation for these procedures is even more controversial,(24) recommendations regarding to other endoscopic procedures may also be favourable. Additionally, as consensus was established for our recommendations in the context of hospital- based colonoscopies, our recommendations may not be generalized to endoscopy conducted in the clinic- based setting, where other features may confirm the administration of anaesthesia services. Further studies and researches will be required to upgrade recommendations for sedation practices for colonoscopy performed in clinic- based facilities.

In conclusion, creating a diverse panel and modified Delphi process, we organised seven consensus- based practice recommendations to teach the application of sedation for regular hospital- based colonoscopy. The results can be used to inform hospital strategy with regard to the application of sedation for in- hospital colonoscopy and can help support the standardisation of sedation practices.

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