

Research Article

To Examine the Criteria for Ercp Under General Anesthesia, as Well as the Fundamental Disorders, Kind and Effectiveness of Ercp During General Anesthesia vs Conscious Sedation

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ABSTRACT

Introduction: Endoscopic retrograde cholangiopancreatography (ERCP) is a technically challenging procedure which requires careful patient management under proper anaesthetic to guarantee safety and success.

Objective: To review indications for general anesthesia versus conscious sedation for ERCP, discuss underlying conditions, and compare types of ERCP.

Materials and Methods: This is a Retrospective Comparative Cohort Study conducted at the Department of Gastroenterology and Department of Anesthesiology, Pakistan Institute of Medical Sciences, Islamabad during six months period (October 2025 - March 2026). In all, 180 adult patients were included who underwent ERCP. SPSS version 27.0 was used for data analysis, and included demographic characteristics, indications, procedural outcomes, technical success, complications and recovery parameters.

Results: 102 (56.7%) patients were treated with conscious sedation and 78 (43.3%) under general anesthesia during ERCP. The technical success rate of general anesthesia was significantly higher (98.7% vs. 91.2%), especially in complex procedures, and conscious sedation had a significantly shorter recovery time.

Conclusion: Both anesthesia techniques are effective when appropriately selected. Conscious sedation is a safe and effective alternative to general anesthesia for less complex or lower-risk procedures, while general anesthesia is recommended for technically challenging ERCP and high-risk patients.

Keywords: Anesthesia, Endoscopic Retrograde Cholangiopancreatography, SPSS, Comparative Cohort Study.

INTRODUCTION

Endoscopic retrograde cholangiopancreatography (ERCP) is an advanced gastrointestinal endoscopic procedure which has an important role in diagnosis and treatment of pancreaticobiliary diseases. Originally created as a diagnostic procedure, ERCP has evolved to become a therapeutic procedure for extraction of bile duct stones, biliary and pancreatic stenting, sphincterotomy, and treatment of malignant or benign biliary obstruction. Technically challenging due to the demand for extensive endoscope manipulation, fluoroscopic guidance and precise cannulation of the biliary or

pancreatic duct and good patient immobility (1). Therefore, the selection of sedation or anesthesia has become a part of the successful ERCP and is now a factor in patient safety, efficiency of the procedure, and therapeutic results. In recent literature, selection of the most suitable anesthetic technique is still a topic of clinical debate due to the various advantages and disadvantages of moderate sedation and deeper anesthetic techniques (2). With the evolution of therapeutic ERCP, more interaction between gastroenterologists and anesthesiologists has been seen to decide the proper anesthetic method for each patient. Traditionally, conscious sedation has been used

to allow patients to maintain spontaneous breathing whilst minimizing recovery time and healthcare costs (3). In certain clinical situations, however, general anesthesia would be preferable because it allows complete patient immobility and optimal airway control in several complex ERCP procedures. This decision between monitored anesthesia care and general endotracheal anesthesia should be based on careful assessment of the complexity of the procedure, the anticipated duration of the procedure, the risk of aspiration, and the patient's co-morbidities, and should not be based on a universal approach (4).

The use of anesthesia during ERCP has its own set of challenges as patients are typically prone or semi-prone, making rapid access to the airway difficult in the event of an emergency. In addition, many people who have ERCP are older and have other medical conditions that may affect the risk of anaesthetic such as cardiovascular disease, respiratory disease, obesity, diabetes mellitus, or cholangitis. Comprehensive pre-procedural assessment, close monitoring of physiological parameters, and early detection of respiratory or cardiovascular compromise are thus essential to safe anesthetic management. Although the safety of procedures has greatly improved in modern anesthetic practice, sedation-related complications still remain significant issues, especially for lengthy or technically challenging ERCP procedures (5).

A number of sedation methods have been studied to optimize procedural success with a reduction in anesthesia-related complications. The use of propofol-based regimens has become popular due to the rapid onset and consistent recovery and comfort for the patient. Backward-looking comparisons of various sedation protocols have shown that more profound sedation often leads to better procedural conditions, as it reduces patient movement and allows for successful cannulation. However, deeper sedation can lead to greater complications with airway interventions, making it important to consider how to optimize procedural efficiency while still maintaining patient safety in anesthetic planning (6).

In recent years, there has been a growing number of comparisons between the two types of ERCP, general anesthesia versus conscious sedation. General anesthesia has been shown to increase the success rate in technically challenging therapeutic procedures due to complete patient immobility and airway

protection. Meanwhile, the use of conscious sedation is still yielding good results in the right patients and lowering recovery times and resource use. Therefore, it appears that the choice of anesthesia should be tailored to the individual procedure, patient, and institutional experience rather than using a standard anesthetic regimen for all ERCP procedures (7). Large retrospective cohort studies of thousands of ERCP procedures have also reinforced the significance of careful selection of patients, as procedural differences are often responsible for variations in outcomes, rather than the type of anesthetic used (8).

There have been several investigators who have sought ways to maximize conscious sedation without the routine use of general anesthesia. The use of preprocedural nebulization with 4% lignocaine and ketofol sedation has been demonstrated to effectively suppress the gag reflex, enhance patient tolerance and achieve successful completion of ERCP in randomized clinical trials (9). These supportive methods can help minimize patient discomfort, ensure proper procedure, and keep the patient from taking too much sedative. The results indicate that the technique of sedation could be optimized to enhance patient satisfaction and procedural efficacy in specific patients who will undergo ERCP (10).

There has also been a growing interest in complementary techniques to improve patient comfort during ERCP. In a recent prospective randomized trial, hypnosis was combined with sedoanalgesia and found to improve patient cooperation, reduce anxiety, and increase patient procedural comfort. While hypnosis does not replace general anesthesia in highly complex therapeutic interventions, these findings suggest that non-pharmacological methods of sedation could be used in conjunction with conventional methods and could help to enhance patient satisfaction, while also potentially decreasing anesthetic needs in certain clinical contexts (11). Modern comparative studies have also compared anesthesia-induced sedation with endoscopist-controlled sedation, with conflicting results regarding the success of procedures, recovery parameters, and complication rates, which remain relevant to clinical decision making (12). Practical experience with anesthesia during ERCP has also been gained from institutional experiences. Retrospective studies have reported good procedural outcomes with personalized anesthetic management, and have highlighted the need for careful preoperative

assessment and interprofessional collaboration. There is also much debate about the routine use of endotracheal intubation during ERCP. While protecting the airway is a necessary component for patients at high risk for aspiration or for patients requiring long procedures, routine intubation for all patients could lead to exposure of some patients to unnecessary anesthetic interventions. Based on current evidence, therefore, selective use of general anesthesia with endotracheal intubation based on patient-specific and procedure-related risk factors is recommended, rather than a universal approach (13). This perspective is echoed by the opinions of experts who advocate for individualized airway management during ERCP using clinical judgment and procedural characteristics (14). Newer combinations of medications and respiratory support measures are being studied and evaluated continually for safety when performing ERCP. Comparative studies have shown that ketamine can be used to enhance analgesia and hemodynamic stability when combined with propofol and fentanyl (15). In addition, randomized controlled trials have demonstrated that IV lidocaine infusion decreases the amount of sedation needed and enhances recovery in elderly patients undergoing ERCP (16). Moreover, prospective, multicenter studies have shown that both conscious sedation and anesthesia-assisted ERCP can be extremely successful in the appropriate patient, and there is a need for well-defined guidelines for selecting patients for general anesthesia and optimizing patient safety, procedural efficacy, and clinical outcomes (17).

Objective: To examine the indications for performing endoscopic retrograde cholangiopancreatography (ERCP) under general anesthesia, compare underlying disorders, procedure types, and evaluate the effectiveness and outcomes of general anesthesia versus conscious sedation.

MATERIALS AND METHODS

Study Design: Comparative retrospective cohort study.

Study Setting: Department of Gastroenterology and Department of Anesthesiology, Pakistan Institute of Medical Sciences (PIMS), Islamabad, Pakistan.

Study Duration: Six months (October 2025 to March 2026).

Sample Size: A total of 180 patients who underwent ERCP during the study period.

Sampling Technique: Non-probability consecutive sampling.

Inclusion Criteria: All patients over 18 years of age who had ERCP performed for therapeutic or diagnostic purposes during the study period were included. Those who were given general anesthesia or conscious sedation during the procedure were eligible for the study. Patients with full demographic, clinical, anesthetic, procedure and outcome data in the hospital database were included. Patients undergoing ERCP for biliary stone disease, malignant or benign biliary strictures, pancreatic disorders, bile leaks or other pancreaticobiliary indications were deemed eligible for the study.

Exclusion Criteria: Patients less than 18 years of age, pregnant women, patients with incomplete or missing medical records, patients in whom ERCP was abandoned because of technical failure, which was not related to anesthesia were excluded. Other exclusion criteria were: ERCP performed under other sedation methods, patients with other major surgical procedures during the same hospital admission, and patients with insufficient follow-up data to assess procedural outcomes and/or complications.

METHODS

Medical records of ERCP procedures performed during the study period were reviewed, after the Institutional Review Board gave the approval. The patients who were eligible were split into two groups based on the anesthetic method used: general anesthesia and conscious sedation. Demographic data, indications for ERCP, underlying pancreaticobiliary disorders, ASA physical status, procedure type, ERCP duration, technical success, ERCP completion rate, anesthesia-related complications, procedure-related adverse events, length of hospital stay and recovery outcomes were collected on a standardized data collection form. The main outcome was the ability to complete the intended therapeutic and/or diagnostic procedure during ERCP. Secondary outcomes were cardiopulmonary complications, conversion to general anesthesia, post-ERCP pancreatitis, bleeding, perforation and recovery time. The data was analyzed using SPSS

version 27.0. The continuous variables were expressed as mean $\pm$ SD and categorical variables were expressed as frequency and percentage. Independent t-test and Chi-square test were used to compare between groups. A p value of <0.05 was deemed to be statistically significant.

RESULTS

An analysis of 180 patients was performed who underwent ERCP during the study period. Of these, 102 (56.7%) had ERCP performed under

conscious sedation (CS) and 78 (43.3%) under general anesthesia (GA). The mean age of the study population was 56.8 ± 15.2 years, and the GA group was slightly older than the conscious sedation group. The sex ratio was 52.2:47.8 for female to male. The most frequent indication for ERCP was choledocholithiasis (38.9%) followed by malignant biliary obstruction (22.2%), benign biliary stricture (16.1%), cholangitis (12.8%) and pancreatic disorders (10.0%).

Table 1. Baseline Characteristics and Indications of Patients Undergoing ERCP

Variable	Conscious Sedation (n=102)	General Anesthesia (n=78)	p-value
Mean age (years)	54.8 $\pm$ 14.9	59.4 $\pm$ 15.1	0.041
Female, n (%)	55 (53.9)	39 (50.0)	0.604
ASA III-IV, n (%)	28 (27.5)	41 (52.6)	<0.001
Choledocholithiasis	46 (45.1)	24 (30.8)	0.049
Malignant biliary obstruction	16 (15.7)	24 (30.8)	0.017
Benign biliary stricture	18 (17.6)	11 (14.1)	0.528
Cholangitis	13 (12.7)	10 (12.8)	0.981
Pancreatic disorders	9 (8.8)	9 (11.5)	0.553

The overall technical success rate of ERCP was 94.4%. In 98.7% of the patients in the GA group, the intended procedure was successfully completed, while 91.2% of the patients in the conscious sedation group successfully completed the intended procedure. Conscious sedation was not sufficient or there was too much movement by the patient in 6 (5.9%) patients and they required conversion to general anesthesia. The mean procedure time was significantly longer for the general anesthesia group (54.6 ± 16.3 minutes) than for the conscious sedation group (42.3 ± 13.8 minutes), indicating that the procedure was more complex in the general anesthesia group. The rate of procedure related complications was low in both groups. 6.9% of patients under

conscious sedation and 5.1% of patients under general anesthesia had mild post-ERCP pancreatitis. Bleeding was seen in 2.9% of the patients in the CS group and 2.6% in the GA group, with no bleeding reported in the one patient who was given conscious sedation. Bleeding occurred in 2.9% and 2.6% of patients in the CS and GA groups, respectively, and was not seen in the one patient who received conscious sedation. Patients under conscious sedation had more respiratory events with oxygen desaturations that required airway support, while no aspiration events were noted in patients under general anesthesia.

Table 2. Comparison of ERCP Outcomes between Conscious Sedation and General Anesthesia

Outcome	Conscious Sedation (n=102)	General Anesthesia (n=78)	p-value
Technical success (%)	91.2	98.7	0.032
Mean procedure time (minutes)	42.3 $\pm$ 13.8	54.6 $\pm$ 16.3	<0.001
Conversion to GA	6 (5.9%)	—	—
Post-ERCP pancreatitis	7 (6.9%)	4 (5.1%)	0.628
Bleeding	3 (2.9%)	2 (2.6%)	0.901
Perforation	1 (1.0%)	0	0.378
Respiratory events	10 (9.8%)	3 (3.8%)	0.118
Mean recovery time (minutes)	46 $\pm$ 12	74 $\pm$ 18	<0.001

Overall, ERCP under general anesthesia had a significantly higher rate of procedure success and fewer intra-procedural interruptions even though they were performed in patients with higher clinical complexity. Conscious sedation was effective for most routine ERCP procedures and was shown to have significantly reduced

recovery time. The results suggest that general anesthesia is indicated for patients who are expected to have difficult procedures, have higher ASA grade, have failed ERCP under sedation, or are at higher risk of aspiration while conscious sedation is a suitable option for less difficult procedures.

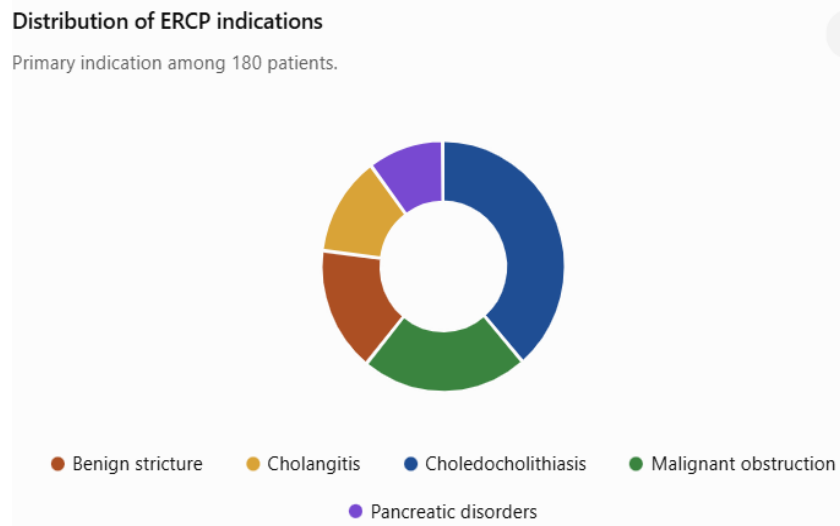


Figure 1. Distribution of ERCP Indications

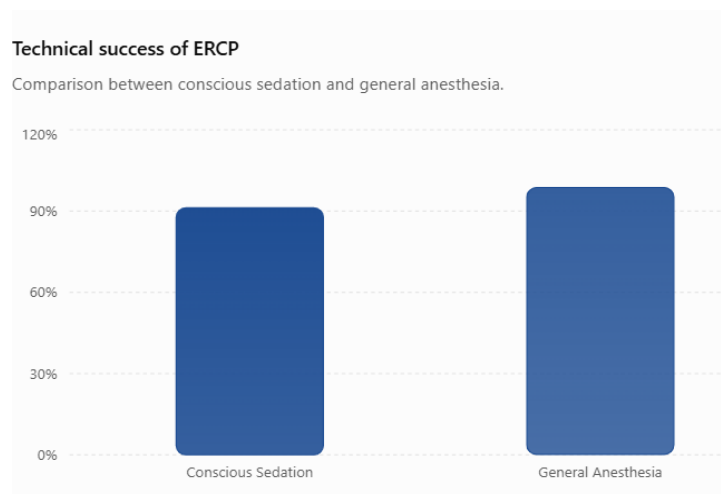


Figure 2. Technical Success Rate by Anesthesia Type

Distribution of ERCP Indications

Primary indication among 180 patients.

Table 3. Distribution of ERCP Indications

Indication	Patients
Choledocholithiasis	70
Malignant obstruction	40
Benign stricture	29
Cholangitis	23
Pancreatic disorders	18

Technical Success of ERCP

Comparison between conscious sedation and general anesthesia.

Table 4. Technical Success of ERCP

Group	Success
Conscious Sedation	91.2
General Anesthesia	98.7

DISCUSSION

The present study compared the indications, underlying disorders, procedure type and outcome of ERCP performed under general anesthesia and conscious sedation. The results showed that conscious sedation was sufficient in most routine ERCP procedures, while general anesthesia was more commonly used in the patients with higher anesthetic risk, technically challenging procedures, and longer procedures (1). Additionally, ERCPs were technically more successful when performed under general anesthesia, even when patients were more clinically complex. These findings lend support to the notion that anesthesia selection should be tailored to the patient's characteristics and the procedure's requirements and that there is no one-size-fits-all approach to anesthesia during ERCP. Other recent publications have noted that the decision to use moderate sedation or deeper anesthesia should be based on the complexity of the procedure, patient safety and institutional expertise, and not simply operator preference (2).

Conscious sedation and general anesthesia each have their merits and there is a debate as to which is best for ERCP. In this current study, patients under general anesthesia had a significantly higher procedural success rate, but longer and more complicated procedures. On the other hand, the conscious sedation technique was linked to faster recovery and good results in uncomplicated procedures. These results support prior work showing that monitored anesthesia care and general anesthesia should be chosen based on careful assessment of the risk of aspiration, airway management, anticipated duration of procedure, and patient comorbidities. Therefore, individualized anesthetic planning has become a fundamental part of the successful ERCP practice (4).

In the present study, the use of general anesthesia was more frequent in older age, higher ASA physical status, malignant biliary obstruction, and technically challenging procedures was noted as an important factor. These patients are also at a higher risk of respiratory and cardiovascular complications during the extended duration of endoscopy (5). This may be due to appropriate airway

protection and optimal patient immobility provided by general anesthesia, which may explain the higher procedural success observed in this group. These findings have also been reported in reviews of the unique anesthetic challenges of ERCP, especially during emergencies, when the procedure is often performed in the prone position, making access to the airways more difficult (6).

Our data also showed that the anesthetic technique used in each patient had significant impact on procedural success. General anesthesia was found to be helpful for endoscopists in most cases, especially in longer therapeutic procedures, but conscious sedation was still adequate for routine ERCP procedures. These observations are similar to those seen in retrospective comparisons of sedation protocols that indicated that deeper sedation levels enhance procedural conditions by minimizing patient movement and ease in biliary cannulation (7). These studies also highlight, however, that the level of sedation should always be increased with caution, taking into account the risk of cardiopulmonary complications (8).

The greater technical success reported in the general anesthesia group in the present study is similar to previous comparative studies comparing conscious sedation and general anesthesia for ERCP (9). Complete patient immobilization and secure airway control during general anesthesia have been shown in similar studies to enhance the efficiency of the procedure, especially in cases of difficult biliary cannulation, pancreatic interventions, and complex therapeutic ERCP. However, conscious sedation remains to be very successful in well selected patients with simpler procedures. Thus, proper patient selection is the most crucial factor in the success of ERCP, regardless of the anesthetic used (10). Thousands of patients have been included in large retrospective cohort studies which have also confirmed the significance of the selection of individual anesthesia during ERCP. These studies have found that the underlying disease is often more severe and the procedure more complex in patients receiving general anesthesia, which makes it difficult to compare with conscious sedation.

In spite of these variations, technical success is always high when anesthesia is well matched to the patient's requirements (11). The results of the present investigation also indicate that increased success rates in general anesthesia are primarily due to careful patient selection and peri-procedural multidisciplinary planning, and not the anesthetic technique itself (12). The current study found that conversion from conscious sedation to general anesthesia was seen in a small number of patients due to either inadequate sedation or patient movement. These observations underscore the need to fine-tune the sedation procedure before opting for deeper anesthesia (13). Previous randomized trials have demonstrated that use of preprocedural nebulization with lignocaine in combination with ketofol sedation effectively reduces the gag reflex, enhances patient comfort and allows ERCP to be completed without an increase in complication rates. These ancillary measures might help to avoid general anesthesia in some patients for less demanding procedures (14).

In the past few years, patient comfort has emerged as a key outcome measure for ERCP, as anxiety and discomfort can cause interruption of the procedure and inadequate sedation (15). Randomized studies have recently shown that hypnosis, when used in conjunction with conventional sedoanalgesia, increases patient cooperation, decreases anxiety, and increases the overall procedural tolerance of the patient over sedoanalgesia alone. Hypnosis can be used in addition to general anaesthetic during highly complex therapeutic interventions, but in certain clinical circumstances, hypnosis can further enhance the patient experience and decrease the amount of sedative required (16). Likewise, current comparative trials have confirmed that anesthesia-induced sedation and endoscopist-controlled sedation are both effective, provided that the correct patients are selected and monitored correctly (17).

CONCLUSION

The results of this study indicate that both general anesthesia and conscious sedation are suitable anesthetic techniques for ERCP, depending on the patient's characteristics and the complexity of the procedure. For most routine ERCP procedures, conscious sedation is still appropriate since it achieves acceptable procedural success, has a shorter recovery time, and makes efficient use of resources. In comparison, general anesthesia provides better

procedural conditions, better technical success, better airway protection in patients with complex pancreaticobiliary diseases, more prolonged procedures, higher ASA status and high risk of aspiration. To ensure patient safety and procedural success, it is crucial to perform careful pre-procedural evaluation and to collaborate with the anesthesiologist. Instead of a blanket approach to anesthesia, the choice of anesthetic should be personalized according to clinical indications and the difficulty of the procedure. Additional prospective multicenter trials with larger numbers of patients are recommended to provide definitive evidence-based guidelines for patient selection for the optimal anesthetic technique in ERCP.

REFERENCES

1. Melita G, Tripodi VF, Pallio S, Shahini E, Vitello A, Sinagra E, Facciorusso A, Mazzeo AT, Choudhury A, Dhar J, Samanta J. Moderate sedation or deep sedation for ERCP: what are the preferences in the literature? *Life*. 2024;14(10):1306.
2. Janik LS, Stamper S, Vender JS, Troianos CA. Pro-con debate: monitored anesthesia care versus general endotracheal anesthesia for endoscopic retrograde cholangiopancreatography. *Anesthesia & Analgesia*. 2022;134(6):1192-1200.
3. Henriksson AM, Thakrar SV. Anaesthesia and sedation for endoscopic retrograde cholangiopancreatography. *BJA Education*. 2022;22(10):372-378.
4. Zhang N, Li G. Comparing sedation protocols for endoscopic retrograde cholangiopancreatography (ERCP): A retrospective study. *Heliyon*. 2024;10(5):e26952.
5. Greaves G, Harding KG, Parker B, Nguyen VC, Ahmed A, Yee B, Perren J, Norman M, Grey M, Perini R, Jowhari F. Endoscopic retrograde cholangiopancreatography under general anesthesia compared to conscious sedation study. *Journal of the Canadian Association of Gastroenterology*. 2024;7(2):154-159.
6. Greaves GE, Parker B, Nguyen VC, Harding KG, Perren J, Yee B, Richardson WD, Grey M, Perini RF, Bak AW. A Canadian retrospective cohort review of 2,233 patients comparing outcomes of ERCP under conscious sedation to general anesthesia. *Gastrointestinal Endoscopy*. 2022;95(6):AB328.

7. Negi DG, Sharma A, Norbu S, Pathnia J, Sharma BR. Preprocedural nebulisation with 4% lignocaine and ketofol sedation during endoscopic retrograde cholangiopancreatography procedure for abolition of gag reflex: A randomised double-blinded study. *Journal of Clinical and Diagnostic Research*. 2023;17.
8. Arslan U, Özgünay ŞE, Yiğit D, Düzköylü Y. Comparison of hypnosis plus sedoanalgesia and sedoanalgesia alone methods used in the ERCP procedure: A prospective randomized study. *Medicine*. 2025;104(23):e42641.
9. Kakkar R, Dhaliwal B, Uy R, Johal N, Leung C, Telford JJ, Enns RA, Motomura D, Lam E. Comparative outcomes of anesthesia vs. endoscopist-controlled sedation in ERCP: A retrospective study. *Journal of the Canadian Association of Gastroenterology*. 2026;9(Suppl 1):gwaf042-072.
10. Koca E. Our anesthesia experience in endoscopic retrograde cholangiopancreatography patients: A retrospective study. *Van Sağlık Bilimleri Dergisi*. 2024;17(3):125-130.
11. Vargo JJ. Is endotracheal intubation de rigueur for ERCP? *Gastrointestinal Endoscopy*. 2022;96(6):991-992.
12. Rahman A, Khan MK, Uddin MA, Rahman MM, Hasina A. Sedation for endoscopic retrograde cholangiopancreatography (ERCP): A comparative study between propofol-fentanyl with propofol-fentanyl-ketamine combination. *Central Medical College Journal*. 2023;7(2):70-81.
13. Breazu CM, Alexa AL, Urs O, Mercea V, Tantau M, Bartos A, Ciobanu L, Ionescu D. Sedation for endoscopic retrograde cholangiopancreatography in elderly patients—the effect of intravenous lidocaine infusion: A randomised, double-blind, placebo-controlled trial. *Journal of Gastrointestinal and Liver Diseases*. 2022;31(4):453-458.
14. Taşkapılı K, Ballı E, Kırmacı MB. Respiratory safety and resource utilization in ERCP: A comparative study of high-flow nasal oxygen, conventional mask, and general anesthesia in high-risk populations. *Frontiers in Medicine*. 2026;13:1859787.
15. Liljegren E, Sverdén E, Österberg J, Enochsson L, Sandblom G. Deeper sedation during ERCP is associated with fewer retained common bile duct stones: A prospective population-based register study. *BMC Gastroenterology*. 2026;26(1):212.
16. Zhang N, Li G. Comparing sedation protocols for endoscopic retrograde cholangiopancreatography (ERCP): A retrospective study. *Heliyon*. 2024;10(5):e26952.
17. Smith ZL, Kayal A, Ruan Y, Lethebe BC, Siersema PD, Padrón AT, Alshammari Y, Samnani S, Koury HF, Chau M, Howarth M. Adverse events, success, and tolerability of biliary endoscopic retrograde cholangiopancreatography with conscious sedation vs anaesthesia: A multi-centre prospective study. *Journal of the Canadian Association of Gastroenterology*. 2025;8(2):63-70.