

SAFETY AND EFFICACY OF ETOMIDATE VS PROPOFOL IN ENDOSCOPIC RETROGRADE CHOLANGIO-PANCRETOGRAPHY: A SYSTEMATIC REVIEW AND META-ANALYSIS



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BACKGROUND

- Patients undergoing Endoscopic retrograde cholangiopancreatography (ERCP) are commonly hemodynamically unstable.
- Proper choice of the anesthetic drug is important to decrease morbidity and mortality.

AIM

 We aim to compare the safety and efficacy of etomidate and propofol in ERCP undergoing patients.

METHODS

- Search engines: PubMed, Web of Science, Scopus, and Cochrane Library.
- Data collection: Inception till May 2022.
- Inclusion Criteria: Randomized controlled trials receiving etomidate or propofol for ERCP.
- Efficacy Outcomes: Induction time, procedure duration, recovery time, patients' satisfaction, and endoscopists' satisfaction.

- Safety Outcomes: bradycardia, tachycardia, hypotension, hypertension, injection-site pain, myoclonus, and other adverse events.
- We assessed Mean difference (MD) and Relative risk (RR) with relative 95% confidence intervals (CI)
- **RevMan Software** to perform the analysis and assessed the heterogeneity using the I² statistic

RESULTS

- **S**tudies Included: 4
- The efficacy outcomes showed no significant difference between the two drugs
- The safety outcomes, etomidate showed significant results compared to propofol in decreasing the risk of hypotension (RR = 0.19, 95% CI [0.05, 0.71], P = 0.01) and injection site pain (RR = 0.27, 95% CI [0.10, 0.70], P = 0.007).

CONCLUSION

- Both drugs had similar efficacy on sedation or anesthesia of patients who underwent ERCP.
- Etomidate was associated with increased risk of myoclonus while propofol was associated with increased risk of hypotension and injection site pain..

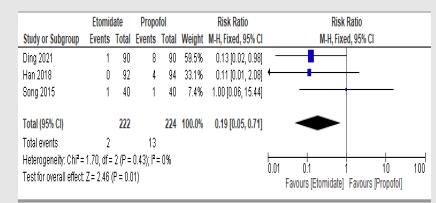


Figure 1: Forest plot for Hypotension

Etomidzee Proposol Risk Ratio Study or Subgroup Events Total Weight M-H, Fixed, 95% CI M-H, Fixed, 95% CI Ding 2021 0 90 6 90 34.3% 0.08 [0.00, 1.35] ————————————————————————————————————										
Ding 2021		Etomidate		Propofol		Risk Ratio		Risk Ratio		
Han 2018	Study or Subgroup	Events	Total	Events	Total	Weight	M-H, Fixed, 95% CI	M-H, Fixed, 95% CI		
Song 2015 0 40 6 40 34.3% 0.08 [0.00, 1.32] Total (95% CI) 222 224 100.0% 0.27 [0.10, 0.70] Total events 4 18 Heterogeneity. Chi²= 3.69, df= 2 (P = 0.16); i²= 46% Toot for everall officet, 7 = 2.89 (P = 0.007) 10 100	Ding 2021	0	90	6	90	34.3%	0.08 [0.00, 1.35]			
Total (95% CI) 222 224 100.0% 0.27 [0.10, 0.70] Total events 4 18 Heterogeneity: Chi²= 3.69, df= 2 (P = 0.16); i²= 46% 0.01 0.1 10 100	Han 2018	4	92	6	94	31.3%	0.68 [0.20, 2.34]			
Total events 4 18 Heterogeneity: Chi²= 3.69, df = 2 (P = 0.16); i²= 46% Toet for everall effect 7 = 2.69 (P = 0.007) 0.01 0.1 10 100	Song 2015	0	40	6	40	34.3%	0.08 [0.00, 1.32]	•		
Heterogeneity: Chi² = 3.69, df = 2 (P = 0.16); i² = 46% Tect for everall officet, 7 = 2.69 (P = 0.007) 10 100	Total (95% CI)		222		224	100.0%	0.27 [0.10, 0.70]	•		
Teet for everall effect: 7 = 2.60 (P = 0.007) U.U.U.U.I 1 10 100	Total events	4		18						
Toet for everall effect: 7 = 2 kg /D = 0.007\	Heterogeneity: Chi² =	3.69, df=	2 (P =	0.16); l² :	= 46%			0.01 0.1 1 10 100		
	Test for overall effect:	Z = 2.68	(P = 0.0	107)						

Figure 2: Forest plot for Injection-Site pain

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200	Etomidate		Propofol		Risk Ratio		Risk Ratio
Study or Subgroup	Events	Total	Events	Total	Weight	M-H, Fixed, 95% CI	M-H, Fixed, 95% CI
Ding 2021	2	90	1	90	50.1%	2.00 [0.18, 21.67]	
Han 2018	11	92	0	94	24.8%	23.49 [1.40, 392.97]	
Song 2015	1	40	0	40	25.1%	3.00 [0.13, 71.51]	•
Total (95% CI)		222		224	100.0%	7.58 [1.76, 32.73]	-
Total events	14		1				
Heterogeneity: Chi²=	2.15, df=	2 (P=	0.34); [2:	- 7%			0.01 0.1 1 10 100
Test for overall effect:	Z= 2.71 ((P = 0.0	007)				Favours [Etomidate] Favours [Propofol]

Figure 3: Forest plot showing risk of Myoclonus