Impact of Guidewire Caliber on ERCP Outcomes: Systematic Review and Meta-Analysis Comparing 0.025- and 0.035-Inch Guidewires

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Background and Study Aims: The impact of guidewire caliber on endoscopic retrograde pancreatography (ERCP) outcomes are not clear. Recent studies have compared two guidewires, 0.035- and 0.025-inch, in randomized controlled trials (RCTs). We performed a systematic review and meta-analysis of available RCTs to assess if different caliber would change the outcomes in ERCP.

Patients and Methods: A systematic search of PubMed/Medline, Embase, Cochrane, SciELO, Global Index Medicus and Web of Science was undertaken through November 23, 2021 to identify relevant RCTs comparing the two guidewires. Binary variables were compared using random effects model and DerSimonian-Laird approach. For each outcome, risk-ratio (RR), 95% confidence interval (CI), and P values were generated. P < 0.05 was considered significant.

Results: Three RCTs with 1079 patients (556 in the 0.035-inch group and 523 in the 0.025-inch group) were included. The primary biliary cannulation was similar in both groups (RR: 1.02, CI: 0.96-1.08, P = 0.60). The overall rates of PEP were also similar between the two groups (RR: 1.15, CI: 0.73-1.81, P = 0.56). Other outcomes (overall cannulation rate, cholangitis, perforation, bleeding, use of adjunct techniques) were also comparable.

Conclusion: The results of our analysis did not demonstrate a clear benefit of using one guidewire over other. The endoscopist should consider using the guidewire based on his technical skills and convenience.

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