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Impact of Rapid On-Site Evaluation on Adequacy of Endoscopic Ultrasound–Guided Fine-Needle Aspiration for Solid Pancreatic Lesions: A Systematic Review and Meta-Analysis

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Rapid on-site evaluation (ROSE) has the potential to improve adequacy rates for endoscopic ultrasound–guided fine-needle aspiration (EUS-FNA) of solid pancreatic lesions. Previous studies published on the impact of ROSE report variable results, and, to our knowledge, a systematic review has not been done on this subject. We performed a systematic review and meta-analysis of studies reporting the adequacy rates for EUS-FNA of solid pancreatic lesions. Studies were assessed by 2 independent reviewers. Random effects meta-analysis model was used to determine adequacy rate. Meta-regression was used to assess the impact of ROSE on adequacy. Heterogeneity was assessed using Higgins I-squared statistic. The initial search produced 3,672 studies, and we identified 73 studies that met our inclusion criteria. The average adequacy rate for all studies was 96.0% (95% confidence interval [CI], 95.3%-96.7%). There was significant heterogeneity across all studies (I-squared = 78.4; $P = .000$). Subgroup analysis showed that ROSE was associated with only a 3% improvement in adequacy rates, compared with studies without ROSE ($P = .044$). The adequacy rate for studies using ROSE was 96.6% (95% CI, 95.8%-97.5%) compared with 93.0% (95% CI, 90.7%-95.2%) for studies that did not use ROSE. On average, adequacy rates are high, but there is considerable heterogeneity between institutions. ROSE is associated with 3% improvement in adequacy rates but does not explain the variability in results across institutions.

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