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Endoscopy

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ENDOSCOPIC ULTRASOUND GUIDED FINE NEEDLE ASPIRATION FOR THE DIAGNOSIS OF PANCREATIC CYSTIC NEOPLASMS: A META-ANALYSIS

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Introduction: Pancreatic cystic neoplasms consist of mucinous cystic neoplasms (MCNs) and serous cystic neoplasms (SCNs). MCNs have significantly greater malignant potential, and if resected early the prognosis is excellent, although mortality is 2-3%. Endoscopic ultrasound is a minimally invasive and well tolerated procedure. EUS with fine-needle aspiration (EUS-FNA) provides samples for cytology and fluid analysis, a major advantage over other techniques. However the diagnostic accuracy of EUS-FNA is highly variable in published studies.

Aim: To determine the diagnostic accuracy of EUS-FNA to differentiate mucinous versus non-mucinous cystic lesions with morphology, and cyst fluid analysis for cytology and carcinoembryonic antigen (CEA) via a meta-analysis of published studies.

Methods: Relevant studies were identified using MEDLINE and included if they used a reference standard of definitive surgical pathology or clinical follow-up (≥ 6 months). Study quality was assessed using the STARD (STAndards for the Reporting of Diagnostic Accuracy) initiative criteria. Data was analysed using Meta-DiSc© v.1.4, which generated pooled estimates for sensitivity, specificity and summary ROC curve. Subgroups, determined *a priori*, were used to assess heterogeneity: prospective vs. retrospective, location, number of centres and patients, 19G or 22G needle and STARD score.

Results: Twenty-four studies published between 2001 and 2011 were included, a total of 1703 patients. The median number of patients in each study was 53 (range 18-197) and the median study length was 54 (12-144) months. The pooled sensitivities (95% CI) and specificities (95% CI) and area under the sROC curve (Standard Error), respectively, were: EUS morphology 55 (49-61)%, 65 (57-72)% and 0.74 (0.095); Cytology 54(50-59)%, 93(90-95)% and 0.95 (0.040); and CEA 63(59-67)%, 88(83-91)% and 0.79 (0.034). Subgroup analysis indicated that retrospective design, low STARD score and study location outside Europe were significant sources of heterogeneity.

Conclusion: Fine-needle aspiration has moderate sensitivity but high specificity resulting in good overall diagnostic accuracy for mucinous cystic neoplasms. Morphology alone is inadequate for distinguishing cystic lesions but may contribute to the assessment of more advanced lesions. The moderate sensitivity of FNA (54%) means a significant proportion of MCNs will not be detected. However, the high specificity (93%) means that a positive result is strongly indicative of a mucinous cystic neoplasm. Thus, EUS-FNA is a useful diagnostic tool for correct identification of MCNs and may be the gold standard for pre-operative assessment.

Disclosure of Interest: None Declared