EUS Guided Through the Needle Biopsy Versus Fine Needle Aspiration for Pancreatic Cystic Lesions: A Systemic Review and Meta-analysis.

Wasef Sayeh, MD [1*], Azizullah Beran, MD[1], Sami Ghazaleh, MD[2], Mohammad Safi; MD[1], David Farrow, MD[1], Sudheer Dhoop, MD[1], Justin Chaung, MD[1], Saif-Eddin Malhas, MD[1], Waleed Khokher, MD[1], Omar Sajdeya, MD[1], Anas Renno, MD[2], Muhammad Aziz, MD[2], Yaseen Alastal; MD[2]

[1]Division of Internal Medicine, Department of Medicine, The University of Toledo, Toledo, OH 43614

[2]Division of Gastroenterology and Hepatology, Department of Medicine, The University of Toledo, Toledo, OH 43614

*Corresponding author: wasef.sayeh@utoledo.edu

Published: 05 May 2023

Introduction: EUS guided FNA has been widely used to collect samples from pancreatic cystic lesions (PCLs) for cytology and fluid analysis. However, EUS guided FNA has relatively lower sensitivity in discriminating the types of lesions. Recent studies have investigated the EUS guided through the needle biopsy (EUS-TTNB) as an alternative method.

Methods: We performed a comprehensive search of the databases: PubMed/MEDLINE, Embase, and the Cochrane Central Register of Controlled Trials from inception through May 10th, 2022. We considered randomized controlled trials, cohort studies, and case-control studies. The primary outcome was sample adequacy which is defined as the presence of enough sample for histopathological evaluation. The secondary outcome was sample accuracy which is defined as the ability to have a definite diagnosis. The random-effects model was used to calculate the risk ratios (RR) and confidence intervals (CI). A p value <0.05 was considered statistically significant.

Results: Nine observational studies involving 520 patients were included in the meta-analysis. The rate of sample adequacy was significantly higher in the EUS-TTNB group (RR 1.64, 95% CI 1.19-2.26, p =0.003, I2 = 95%) (Figure 1a). The diagnostic accuracy was significantly higher in the same group (RR 2.03, 95% CI 1.13-3.65, p = 0.02, I2 = 87%) (Figure 1 b).

Discussion: Our meta-analysis demonstrated that the rates of both sample adequacy and accuracy were higher in the EUS-TTNB group compared to the EUS-FNA group. EUS-TTNB should be considered

where applicable clinically for improving the diagnostic yield in patients undergoing evaluation of PCLs.