

## #123 - ENDOSCOPIC ULTRASOUND SHEAR WAVE FOR ASSESSING CHRONIC PANCREATITIS AND SOLID PANCREATIC NEOPLASM: A NESTED CASE-CONTROL STUDY

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**Background:** Endoscopic ultrasound (EUS)-guided shear wave elastography (EUS-SW) measures tissue elasticity by shear waves inside the organ through acoustic radiation force impulse. Its accuracy has not been assessed for chronic pancreatitis (CP) and solid pancreatic neoplasms (PN).

**Aim:** To estimate the diagnostic accuracy of EUS-SW for CP and solid PN.

**Methods:** Cases with a recently confirmed diagnosis of CP or PN who underwent EUS-SW were included. Cases with subepithelial lesion comprised the control group (CG). An expert endoscopist performed ten measurements of EUS-SW elasticity (SWE) and dispersion (SWD). SWE and SWD variation were based on quotient among interquartile range (IQR) and median. In cases with <30% variation, the association of SWE and SWD was estimated with study groups, baseline and EUS data through ANOVA. SWE and SWD cut-off values were calculated with Youden's index.

**Results:** 88 cases: 37 CG, 14 CP, 37 PN, median age of 62.5 (IQR 53-70), 47.7% female. Median SR was lower in CG (3.6; IQR 2.9-4.3) and CP (3.9; IQR 3.6 - 4.7) but significantly higher in PN (7.6; IQR 5.3-11.1;  $p < .001$ ). Median SWE and SWD were 10.5 kPa (7.3-16.6) and 1.9 [m/s]/kHz (1.6-2.4), with a <30% variation in 27 (30.7%) and 57 (64.8%), respectively. Study groups (CG/CP/PN) and diabetes were associated with a higher SWE and SWD ( $p < .05$ ). Predicted SWE were significantly different among PN vs CG (-13.1; -24.4 to -1.7;  $p = .0242$ ) (figure 1). An SWE  $\geq 17.4$  diagnosed PN with sensitivity, specificity, positive and negative predictive values of 75%, 91%, 60% and 95%; while an SWD  $\geq 2.31$  predicted PN with a diagnostic accuracy of 54%, 70%, 35%, 84%, respectively.

**Conclusion:** EUS-SW constitutes an objectively valuable measuring tool for CP and PN diagnostic workups. Larger multicentric trials are needed to confirm these findings, especially for CP.

**Figure 1.** ANOVA predicted values of endoscopic ultrasound (EUS)-guided shear wave elasticity (SWE) and dispersion (SWD).

