

## Endoscopic ultrasound elastography for differentiation of benign and malign pancreatic lesions

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**Introduction:** The diagnosis of focal pancreatic lesions remains challenging despite improvement in imaging methods. Recent data suggest that endoscopic ultrasound (EUS) elastography can accurately differentiate malignant lesions from benign masses. To aim of this study was to evaluate the accuracy of EUS elastography for diagnosis of focal pancreatic masses

**Methods:** We analysed 49 consecutive patients solid focal pancreatic lesions. 24 of 49 patients were included prospectively over a year period and studied by EUS with real time elastography. We used color pattern to description of tissue stiffness. Different elasticity values are marked with different colors resulting in different tissue elasticity patterns, represented in color superimposed over the conventional B-mode. The system is set-up hue color map (red-green-blue), where hard tissue areas are shown in dark blue, intermediate tissue areas in green, medium soft tissue areas in yellow, and soft tissue areas in red (Giovannini classification-GESS\*). Final diagnosis was based on histopathology, Fine-needle aspiration (FNA) cytology

**Results:** Blue color pattern and malign histopathology/cytology were found in 15 of 24 patients. Yellow/green color pattern and benign histopathology/cytology were found in 5 of 24 patients. A ROC curve was performed to evaluate the overall predictive value of Giovannini elastography score (GESS). This analysis showed a statistically significant area under the curve of 0.842 with a standard error of 0.129 and  $p = 0.008$  (95% CI (0.604-0.966)). Maximal Youden index calculated the Giovanni Elastography Grading Scale cut-off value at 4 with a specificity of 75.0% and sensitivity of 93.3%.

**Conclusion:** EUS elastography is a novel technique for the discrimination of solid pancreatic masses and may be useful complementary tool for EUS-guided FNA

**Keywords:** pancreas, benign/malign lesions, eus-elastography