

Negative brush cytology on endoscopic retrograde cholangiopancreatography (ERCP): Factors associated with malignancy

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Aim: ERCP brush cytology is an established technique for diagnosing pancreato-biliary malignancies. However, its accuracy remains modest with nearly half of malignancies missed. There is a lack of research assessing factors associated with negative brush cytology results. The aim of our study is to analyze factors associated with negative brush cytology samples and their ability to differentiate between malignant and benign samples.

Method: Data from all consecutive patients who had ERCP brush cytology in NHS Lanarkshire between January 2006 and December 2015 was retrospectively collected and analyzed. 217 out of 232 patients were included in the final study; their cytology, radiology and ERCP reports were analyzed. Age, ALT, ALP, bilirubin, CEA and CA 19-9 levels along with presence of mass on imaging, mass size, stricture length and location were the factors assessed. Factors highlighted by univariate analysis were further analyzed by binary logistic regression analysis.

Results: 138 patients had a malignancy of which 77 had a positive brush cytology sample (sensitivity: 55.8% and specificity: 97.5%). 138 patients had a negative sample and the likelihood of a false negative brush cytology increased with an increase in bilirubin levels {OR 1.005; 95% CI: (1.002-1.008) p=0.001}, ALT levels {OR 1.003; 95% CI: (1.001-1.006) p=0.021} and age {OR 1.045; 95% CI: (1.012-1.079) p=0.01}. Using ROC curves optimal cut-offs for ALT and bilirubin were 84.5 U/L (sensitivity: 70% and specificity: 70%) and 181.5 $\mu\text{mol/L}$ (sensitivity: 73% and specificity: 67%).

Conclusion: Increasing age, bilirubin and ALT levels are independent predictors of malignancy in a negative brush cytology sample.

Biography

Saif Khan has completed his BSc from the University of Bradford and is currently, a 4th year Medical student at the University of Glasgow. He has a keen interest in Gastroenterology and has completed multiple projects in this subject. He has published many papers in reputed journals in collaboration with others. He also has an interest in Imaging and is currently undertaking a project on MRCPs.

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