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A comprehensive approach to the prediction of acute calcular cholangitis – The Qatar experience

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Introduction: Of the common complications of gallstones, acute cholangitis (AC) is the most rapidly lethal entity, making accurate diagnosis and early treatment imperative. Studies that report on the risk factors for developing AC secondary to bile duct stones are rare. The aim of the present study is to identify clinical, laboratory and radiological factors that can predict which patients may develop cholangitis.

Patients and Methods: The study is a retrospective case-control study based on patients admitted to Hamad General Hospital from June 2006 to November 2010 with a diagnosis of AC secondary to CBD stones. The control subjects were patients admitted during the same period with obstructive lithiasic jaundice, but not complicated by cholangitis. Countries of origin, age, sex, history of diabetes mellitus, hypertension, chronic liver disease, previous similar attack, previous cholecystectomy, previous bariatric surgery procedure, small bowel resection, significant weight loss and Crohn's disease were studied. Also, complete blood count (CBC), prothrombin time (PT), liver enzymes (ALT and AST), bilirubin, alkaline phosphatase, albumin, amylase creatinine and blood urea nitrogen (BUN) were studied. Finally the diagnostic investigations and the surgical endoscopic procedures have been reported. Statistical analysis was performed.

Results: A total of 112 patients of 24 different nationalities (70 men and 42 women) were included in this study. 53 patients (43.4%) presented with AC (cases group), and 59 (56.6%) admitted for management of obstructive jaundice. Although Asians had a greater prevalence of cholangitis (57.4%) compared to Middle Easterners (35.7%) and Africans (33.3%), this was not statistically significant ($P=0.066$). Laboratory tests significantly correlated to AC were leukocytosis ($P<0.001$), elevated Bilirubin ($P=0.005$), prolonged prothrombin time ($P=0.001$), elevated INR ($P=0.001$), elevated serum Creatinine ($P=0.001$) and BUN ($P=0.001$). In univariate analysis the logistic regression model showed that dark urine, fever, elevated WBC and BUN were strongly associated with cholangitis.

Conclusions: Typical clinical signs of acute cholangitis, history of chronic liver disease, together with certain biochemical criteria are strongly associated with occurrence of acute lithiasic cholangitis. Further study on a larger sample of patients is required to confirm these findings and as an attempt to create a reproducible and simple scoring system able to predict and consequently facilitate early intervention in such cases.

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