CIRUGÍA ESPAÑOLA

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Original article

Biliary Pancreatitis. Liver Function Tests and Common Biliopancreatic Channel Kinetics - Biliopancreatic Reflux☆

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ARTICLE INFO

Article history:
Received 27 August 2012
Accepted 9 April 2013
Available online 16 April 2015

Keywords:
Billiary pancreatitis
Biliopancreatic reflux
Liver function tests

ABSTRACT

Objective: To determine the prevalence of biliopancreatic reflux (BPR) in patients with biliary pancreatitis (BP) undergoing elective cholecystectomy with intraoperative cholangiography (IOC) in comparison with a control group of symptomatic cholelithiasis (CG).
Patients and methods: Retrospective review of 107 consecutive BP cases. BPR was determined by IOC and liver function tests (LFT) were recorded at admission (A), 48 h, and preoperative examination (P). LFT analysis between A and P were analyzed between groups with respect to BPR, time interval to cholecystectomy within the same group and by determination of observed value/maximum normal value ratio (OV/MNV).
Results: BPR incidence was 38.3% in BP in comparison with 5% in CG (P=.0001) it was independent from interval time to cholecystectomy, in contrast with Odditis, suggesting an anatomical condition for CCBP and a functional one for Odditis. LFT analysis showed no differences in relation to BPR incidence. LFT excluding AP and GGT returned to normal values with significant differences in OV/MNV when BPR was present which points to an increased cholestasis in BPR group. US dilatation of CBD was noted in 10.3% and was associated to CCBP.
Conclusions: BPR in BP increases cholestasis and contributes to confusion in the estimation of common bile duct stones increasing ERCP-EE rates. US and biochemical markers of CBDS show a low specificity due to BPR-CCBP which suggests that MRI-cholangiography is a mandatory exploration before ERCP-EE examination.

☆ Please cite this article as: Planells Roig M, Ponce Villar Ú, Peiró Monzó F, Coret Franco A, Orozco Gil N, Bañuls Matoses Á, et al. Pancreatitis biliar. Cinética de pruebas funcionales hepáticas y canal común biliopancreático - reflujo biliopancreático. Cir Esp. 2015;93:326–333.

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2173-5077/$ – see front matter

Pancreatitis biliar. Cinética de pruebas funcionales hepáticas y canal común biliopancreático - reflujo biliopancreático

Palabras clave:
Pancreatitis biliar
Reflujo biliopancreático
Pruebas funcionales hepáticas

RESUMEN

Objetivo: Estudio de la prevalencia de reflujo biliopancreático (RBP)/canal común biliopancreático (CCBP) en pacientes con pancreatitis biliar (PB) sometidos a colecistetomía (CST) y colangiografía intraoperatoria (CIO) y análisis de la cinética de pruebas funcionales hepáticas (PFH) en comparación con un grupo control (GC) de colelitiasis sintomática.

Material y métodos: Estudio retrospectivo de 107 pacientes consecutivos con PB. Se determinó la existencia de RBP-CCBP en la CIO y se analizaron las PFH al ingreso (AI), a las 48 horas y en el examen preoperatorio (AP). La variación analítica se analizó entre grupos según existencia de RBP-CCBP y entre el AI y AP, según intervalo ingreso-intervención (III) y dentro del mismo grupo mediante determinación de la ratio valor observado-valor máximo normal (VO/VMN).

Resultados: La incidencia de CCBP fue de 38,3% en PB vs 5,0 en GC ($p = 0,0001$) y fue independiente del III a diferencia de la odditis apuntando a una alteración anatómica para la primera y funcional para la segunda. Las variaciones analíticas no muestran diferencias entre grupos en función de la existencia de CCBP, pero con ausencia de diferencias al analizar la ratio VO/VMN en FA y GGT, lo que indica un mayor grado de colestasis en los pacientes con RBP-CCBP. La incidencia de dilatación de vía biliar US fue del 10,3% asociándose a CCBP.

Conclusiones: El RBP-CCBP en PB genera un mayor grado de colestasis e incertidumbre en la estimación de coledocolitiasis asociada y excesiva sobreindicación de ERCP-EE. Los marcadores US y bioquímicos de coledocolitiasis tienen una baja especificidad en PB por la existencia de CCBP lo que obliga a incluir a la colangiografía por RMN como exploración previa a la ERCP-EE.

Introduction

Biliary pancreatitis (BP) is triggered by the onset of biliopancreatic reflux (BPR) secondary to transient lithiasic obstruction of the opening of the common bile duct and the Wirsung duct at the papilla of Vater. This combined mouth or biliopancreatic common channel (BPCC) occurs in 67% the patients[1] while an independent opening of the ducts occurs in the rest of the population.

BPR demonstration and therefore the existence of BPCC through intraoperative cholangiography (IOC) or trans-Kehr intraoperative cholangiography[2] occurs in 7%–50% of the patients who undergo a cholangiography[3] with an increase in the prevalence of BP up to 87%.[4]

BPCC allows the gallstones of small size (microlithiasis) to produce a transient ampullary obstruction, which is initially mechanical and subsequently inflammatory, and at the same time, generates BPR causing BP,[5] without the need of the existence of choledocian occupation maintained for BP development or maintenance.

Our study had two purposes. First, to assess the incidence of BPR and BPCC in patients with BP who undergo cholecystectomy and routine IOC, in order to analyze the possible differences attributable to its presence in patients with BP translated in terms of alterations in the liver function tests (LFT) and assess the possible importance of its existence. Secondly, to analyze the kinetics of LFT alterations in order to establish a selective indication of preoperative explorations before cholecystectomy in patients with BP.

Material and Methods

Retrospective case study of patients with a diagnosis of BP and subsequent scheduled cholecystectomy subject to IOC. The study included 107 patients with BP as the first episode during a period of 48 months. Exclusion criteria were the following: recurrent BP, pancreatitis post-endoscopic retrograde cholangiopancreatography (ERCP), chronic alcoholism, hypertriglyceridemia, hypercalcaemia or use of pancreatitis associated drugs. BP was diagnosed in patients with abdominal pain and elevated amylase greater than 3 times the standard level (amylase >380). Liver function tests at the time of admission (LFTA) were performed in all patients, including the urgent laboratory test at admission, and after 48 h, in order to establish the Ransom-Inrie criteria.[6] Patients who were subject to ERCP and sphincterotomy (ERCP-ES) and those who presented severe BP with necrosis, abscess, pseudocyst or organ failure were excluded.

Urgent abdominal ultrasound was performed in all cases as well as abdominal CT with contrast in selected cases. The presence of bile duct dilatation (BDD) by ultrasonography was established according to Bachar parameters in relation to the age ranges.[7]

All patients received initial medical treatment and, after a variable period, they underwent scheduled surgery, either at admission or later on, prior preoperative laboratory test with complete liver profile (PLFT).

A series of 80 patients were used as a control group (CG) and were submitted to elective cholecystectomy and IOC, for uncomplicated symptomatic cholelithiasis; such patients