Abstract

BACKGROUND:

Many experimental studies have verified that obstructive jaundice (OJ) causes bacterial translocation (BT).

OBJECTIVES:

The aim of this study was to assess whether C-Reactive Protein (CRP) can be used to detect bacterial translocation induced by biliary obstruction.

MATERIAL AND METHODS:

Twenty rats were divided into two groups containing 10 rats each: sham-operated controls and the obstructive jaundice (OJ) group. All procedures were performed aseptically. After an upper midline incision, the common bile duct (CBD) was identified, mobilized, ligated and divided. The sham-operated animals had a similar incision, followed by mobilization of the CBD, without ligation or division. Ten days after the first operation, a second laparotomy was performed. Blood samples were collected for culture and serum CRP analysis. In addition, liver, spleen, and mesenteric lymph node (MLN) specimens were taken for microbiological culture to determine the presence of BT. BT was considered positive if there was any bacterial growth in the MLN, liver, spleen, or blood cultures; a lack of bacterial growth indicated a negative BT.

RESULTS:

The OJ group had significantly higher rates of bacterial translocation than the sham-operated group (p = 0.002). Mean CRP levels (ng/mL) were 8.7 ± 11.8 and 18.6 ± 17.2 in the sham-operated group and the OJ group respectively. There was no significant difference in mean CRP levels between the two groups (p = 0.257). Mean CRP levels were 4.5 ± 4.3 and 24.9 ± 16.4 in the BT (-) and BT (+) groups respectively (p = 0.003). A marked increase in CRP levels paralleled an increase in BT.

CONCLUSIONS:

This study has demonstrated a direct relationship between BT and CRP levels in an experimental OJ model.