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Routine Intra-Operative Bile Culture and Drainage Fluid Culture as a Guide for Antibiotic Therapy in Pancreatic Surgery

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Context Despite improvement in mortality, surgical morbidity in pancreatic surgery remains high, and infectious complications have a main role. **Objective** To evaluate the role of intra-operative bile culture as a guide for post-operative antibiotic therapy in case of infectious complications. **Methods** From January 2010 to June 2012 we realized 136 pancreatico-duodenectomies for periampullary diseases. Intra-operative bile sampling and postoperative sampling from peri-pancreatic drainage fluid for culture were performed in 110 patients (81%) who were enrolled in this study. Forty-four patients (40%) experienced infectious complications (Group A) while 66 patients (60%) did not (Group B). Infectious surgical complications were: 31 POPFs (13 grade A, 18 grade B-C), 6 abdominal abscesses, 5 biliary fistulas, 1 gastro-duodenal fistula and 19 wound infections (some patients has more than one complication). Data were collected prospectively. **Results** Bile cultures resulted positive in 61/110 patients (56%), there were no differences in the rate of infected bile between the two Groups (57% *vs*. 55%); preoperative biliary stenting was strongly correlated with biliary infection (100% in stented patients *vs*. 18% in non-stented; P<0.001). Drainage fluid cultures resulted positive in 66/110 (61%) patients: in Group A they were positive in 40/44 patients (91%) while in Group B in 26/66 patients (40%) (P<0.05, chi-square test). In Group A negative drainage cultures belonged to patients who developed grade A POPF or wound infection. In Group B positive drainage cultures belonged to patients with infected bile in 62% of cases; in 19% of cases cultures were contaminated by skin germs (*Staphylococcus*). From drainage fluid culture, we isolated 102 germs (55 Gram +, 41 Gram -, 8 fungi) in Group A and 37 germs (26 Gram +, 11 Gram -) in Group B; 44/102 germs (43%) and 12/37 germs (32%) in Groups A and B, respectively were identical to that found in bile cultures. **Conclusion** In patients who develop abdominal infectious complications the high concordance between bile and drainage fluid cultures suggests that bile cultures can be useful as a guide for postoperative antibiotic therapy. The presence of infected bile can cause contamination of peritoneal fluid even in uncomplicated patients but it has no clinical relevance.