

## The Frequency of Bacterial Agents in the Bile Juice of Patients with Bile Stones and Biliary Disorders

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### Abstract

**Background and objectives:** Bile in healthy people is a sterile fluid and presence of any microorganism can be a marker for a disorder like cholelithiasis. The aim of this study was to determine the frequency of bacterial agents in the bile of patients with bilestone, malignant pancreatic and biliary diseases.

**Material and Methods:** One hundred and two bile samples were obtained, during six months in 2011, from patients subjected to ERCP in Taleghani hospital, Tehran. First, Patient's clinical data, the type stone, and their disease status were studied, and then the microbiological investigations, such as culture, identification of the bacteria and detection of their counts, drug susceptibility testing and molecular tests (16s rDNA PCR) performed on all the samples. Higher than  $10^3$  bacteria counts for each sample, in the absence of underlying infections, was considered as stable colonization. We run SPSS version 13 to analyze the data.

**Results:** Out of 42(41.1%) positive bile culture samples, 59 bacterial isolates are detected by conventional methods. Of culture negative samples, seven have bacterial DNA indicated by PCR method. The most isolated bacteria are E. coli (%34.4), Enterococcus spp. (%19.7), Klebsiella pneumoniae (%18) and Pseudomonas aeruginos (18%). The most frequent stones are cholesterol, black pigment and brown pigment, respectively. There is no significant association between the diseases, stones and types of bacteria. Previous antibiotic usage (44.6%) is meaningfully more than that of other biliary problems ( $p=0.01$ ).

**Conclusion:** The presence of bacteria, Escherchi coli and Entrococcus which are the most in bile samples, is considered as a risk factor in pathogenesis of biliary disorders. Further studies on the pathogenesis and pathophysiological effects of bacteria can help us to clarify the role of bacteria in producing bile stones.

**Key words:** Bile stones, Bacteria, ERCP, Antibiotics.