Microbial flora in the pancreatic juice of children with chronic pancreatitis.

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Introduction

Chronic pancreatitis in childhood is a relatively rare disease but it may have significant consequences and result in growth retardation with a weight deficit and malnutrition[1].
The potential role of microorganisms in the pathogenesis of chronic pancreatitis has not been fully elucidated[2]. The aim of this prospective hospital-based study was to analyze microbial flora in pancreatic juice in children with chronic pancreatitis.

Methods

❖The study group consisted of 18 patients with chronic pancreatitis who underwent endoscopic retrograde cholangiopancreatography at the Children's Memorial Health Institute in Warsaw between November 2013 and October 2014 (Table 1).

Numer of patients	18
Sex (Female/ Male)	10 F/ 8 M
Age	median 15 years (range 7- 17 years)
Total number of specimens	40 total: - 13 paired samples of pancreatic juice and pancreatic prosthesis - 5 samples of pancreatic prosthesis - 9 samples of pancreatic juice

Figure 1. Characteristics of the study group.

❖8 patients had specimens collected repeatedly - at least 2 collections in time intervals ranging from 1 to 5 months.
❖The specimens were cultured on liquid and solid media, and incubated in both aerobic and anaerobic conditions. Isolation, identification and detection of mechanisms of antimicrobial resistance were performed by standard microbiological methods (API, VITEK 2 and Disc Diffusion Method according to EUCAST guidelines).

Results

❖ All investigated samples - both pancreatic juice and pancreatic prosthesis showed microbial growth. All samples were polymicrobial with a high microbial load 10^3-10^5 CFU/mL. A total of n=164 bacterial and fungal strains were isolated (Fig. 1 and 2).
❖Among *Enterobacteriaceae* most frequently isolated species were: *Klebsiella spp.*, *E. coli* and *Enterobacter spp.*
❖No significant rate of antimicrobial resistance was observed: only 11% of *Enterobacteriaceae* were ESBL- and/or AmpC - positive.

Fig 1: Microorganisms isolated from pancreatic juice of patients with chronic pancreatitis (total n=164)

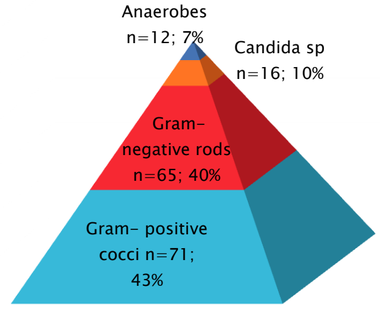
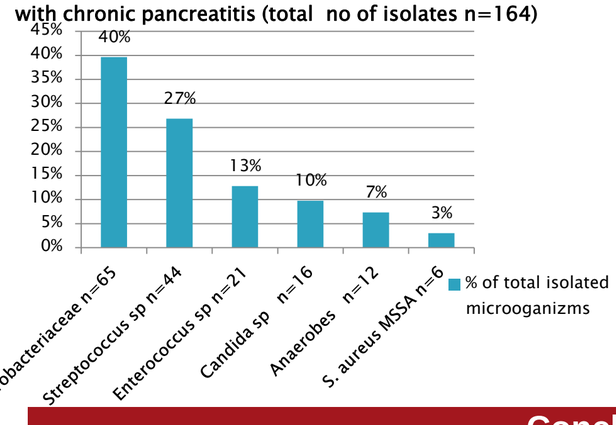


Fig. 2: Frequency of isolation of particular microorganisms from pancreatic material in patients with chronic pancreatitis (total no of isolates n=164)



❖The distribution of microorganisms was similar between both investigated materials: pancreatic juice and pancreatic prosthesis.

❖Cultures of specimens collected from the same patients repeatedly in time intervals showed comparable microbial components - especially among *Enterobacteriaceae* family.

Conclusions

❖Pancreatic juice of children with chronic pancreatitis is very highly colonized with diverse microbial flora, relatively susceptible to antimicrobial agents.
❖The role of microorganisms in the pathogenesis of chronic pancreatitis requires investigation in further studies.

References:

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