
DETERMINATION OF ANTIBACTERIAL SENSITIVITY OF BACTEROIDES FRAGILIS ISOLATED FROM INTRAABDOMINAL INFECTIONS

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Introduction: Modern intra-abdominal infections are characterized by rapidly growing antibiotic resistance. Gram-negative bacillus B.fragilis is one of the dominating anaerobic pathogens. Thus this research aims to study sensitivity of B.fragilis, isolated from patients' peritoneal exudate, to antibacterial drugs.

Methods: Clinical samples from 72 patients from the surgical department of the City Hospital No. 1 and the Multidisciplinary Regional Hospital No. 2 (Nur-Sultan) from 2018 to 2019 were collected to form B.fragilis collection. All isolated bacteroid strains were identified using MALDI-TOF MS (with a score of ≥ 2) and via identification of a direct nucleotide sequence of the 16S rRNA gene fragment. Minimum inhibitory concentration (MIC) of antibiotics was determined using M.I.C. strips (Oxoid, England) with antibiotic concentration gradients plotted. Four antimicrobial agents were tested: ciprofloxacin, metronidazole, meropenem and clindamycin.

Results: Overall, 9 strains of anaerobic bacteria B.fragilis were isolated from 72 clinical samples of various intra-abdominal infections. It was found that in intraabdominal infections after B.fragilis extraction, often B. thetaiotaomicron, Parabacteroides distasonis, B. ovatus, less often B. clarus, Prevotella heparinolytica and B.salyersiae are extracted. After antibiotic sensitivity test of B. fragilis, it is found that most of the studied cultures (67%) are ciprofloxacin resistant and smaller part (14%) is resistant to metronidazole. 25% of the strains showed moderate sensitivity to meropenem, 33% to ciprofloxacin, 50% to clindamycin and 57% to metronidazole. 29% of the strains demonstrated high sensitivity to metronidazole and 50% to clindamycin. The highest sensitivity of B. fragilis (75%) was to meropenem (carbapenem) among all antimicrobial agents tested.

Conclusions: Thus, obtained results help to elucidate inclusion of drugs that are the most active against the B.fragilis. Namely, inclusion of meropenem as monotherapy and metronidazole in combination with other antibiotics for the treatment of intra-abdominal infections.