

## Anaerobic Bacteraemia Revisited: Species and Susceptibilities

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### Abstract

**Introduction:** This retrospective study was performed to evaluate the frequency of anaerobic bacteraemia over a 10-year period, and to provide updated antibiotic susceptibilities for the more clinically relevant anaerobes causing blood stream infection. **Materials and Methods:** Data were retrieved from the laboratory information system for the period 2003 to 2012. During this time, blood cultures were inoculated in Bactec™ Plus vials (BD, USA) and continuously monitored in the Bactec™ 9000 blood culture system (BD, USA). Anaerobic organisms were identified using commercial identification kits, predominantly API20A (bioMérieux, France) supplemented with Vitek ANC cards (bioMérieux, France) and AN-Ident discs (Oxoid, United Kingdom). A representative subset of isolates were retrieved from 2009 to 2011 and antimicrobial susceptibilities to penicillin, amoxicillin-clavulanate, clindamycin, imipenem, moxifloxacin, piperacillin-tazobactam and metronidazole were determined using the Etest method. **Results:** Anaerobes comprised 4.1% of all positive blood culture with 727 obligate anaerobes recovered over the 10-year period, representing a positivity rate of 0.35%. The only significant change in anaerobe positivity rates occurred between 2003 and 2004, with an increase of 0.2%. The *Bacteroides fragilis* group (45%) were the predominant anaerobic pathogens, followed by *Clostridium* species (12%), *Propionibacterium* species (11%) and *Fusobacterium* species (6%). The most active in vitro antibiotics were imipenem, piperacillin-tazobactam, amoxicillin-clavulanate and metronidazole, with susceptibilities of 95.0%, 93.3%, 90.8% and 90.8% respectively. Resistance was high to penicillin, clindamycin and moxifloxacin. However, there were apparent differences for antibiotic susceptibilities between species. **Conclusion:** This study indicates that the anaerobes comprise a small but constant proportion of bloodstream isolates. Antibiotic resistance was high to some antibiotics, but metronidazole, the beta-lactam/beta-lactamase inhibitors and carbapenems retained good in vitro activity.

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**Key words:** Antibiotic resistance, Bacteroides

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