Anaerobic Gram Negative Bacteria - other than Bacteroides Parabacteroides (LTR57852)

Edit Approved By: Dragan, Tatiana (09/15/2021) **Revision: 5.00**

Organism

Anaerobic Gram Negative Bacteria – other than Bacteroides and Parabacteroides ssp.

- *Acidaminococcus spp*
- *Alistipes spp*
- *Alloprevetella spp*
- *Anaerobiospirillum spp*
- *Barnesiella spp*
- *Bilophila spp*
- *Campylobacter (anaerobic) spp*
- *Centipeda spp*
- *Christensenella spp*
- *Coprobacter spp*
- *Desulfomicrobium spp*
- *Desulfovibrio spp*
- *Dialister spp*
- *Fretibacterium spp*
- *Fusobacterium spp*
- *Jonquetella spp*
- *Leptotrichia spp*
- *Megamonas spp*
- *Megasphaera spp*
- *Odoribacter spp*
- *Paraprevotella spp*
- *Parasutterella spp*
- *Phocaeicola spp*
- *Porphyromonas spp*
- *Phascolarctobacterium spp*
- *Prevotella spp*
- *Pseudoflavonifractor spp*
- *Pyramidobacter spp*
- *Selenomonas spp*
- *Sneathia spp*
- *Succinatimonas spp*
- *Sutterella spp*
- *Tannerella spp*
- *Veillonella spp*
- *Wolinella spp*

Clinical

Many species of anaerobic Gram negative bacilli make up the normal flora of the upper respiratory, gastrointestinal, and female genitourinary tracts. They may be involved in polymicrobial infections usually in association with abscess formation. Infections with some of these organisms include bacteremia, head/neck, pleuropulmonary, skin/soft tissue, intra-abdominal, oral and pelvic infections. *Fusobacterium spp* have also been associated with septic thrombophlebitis, including LeMierre's disease.

Usual susceptibility pattern

Most of these organisms are susceptible to metronidazole, amoxicillin/clavulante, piperacillin/tazobactam and carbapenems. Resistance to clindamycin is significant. Penicillin resistance is usually medicated by beta-lactamase production. It is very common in *Bilophila spp* and *Prevotella spp*. Penicillin resistance in *Fusobacterium spp* is relatively rare and resistance to imipenem and meropenem has been reported. Decreased susceptibility to imipenem has been reported in *Prevotella spp*. Rare reports of metronidazole resistance in *Prevotella spp* has been described. *Sutterella spp.* may be resistant to metronidazole.

Anaerobic Gram Negative Bacteria – other than Bacteroides and Parabacteroides spp, Continued

Susceptibility method

Etest method using Laked Blood Agar incubated anaerobically at 35°C for 48-72 hours, depending on growth characteristics. (Clindamycin - read at 48 hours).

For Fusobacterium sp. only:
Etest method using FAA media incubated anaerobically at 35°C for 72 hours. Add comment: "Susceptibility testing for this organism was performed by a non-reference method and/or required modifications to the standard test conditions. Results are probable but not definite." **(21303 and 23380)**

Note: Use 1.0 McFarland suspension in pre-reduced, enriched thioglycollate broth.

Susceptibility reporting

	CSF/ Brain	Blood	Sterile Body Site/ Deep Wound	Comments
Beta-Lactamase	*	*	*	*Test but do not report
Amoxicillin/ clavulanate (oral)			2	2nd line if pen I/R If pip/tazo I/R and amox/clav S **see Special Considerations**
Clindamycin			✓	
Meropenem	✓	2	2	2nd line if pen I/R If meropenem I/R **see Special Considerations**
Metronidazole	✓	✓	✓	If metronidazole I/R **see Special Considerations**
Penicillin	✓	✓	✓	If β-lactamase positive – report pen R If pen I/R and β-lactamase negative **see Special Considerations**
Piperacillin/ tazobactam		2	2	2nd line if pen I/R If pip/tazo I/R and amox/clav S **see Special Considerations**

Anaerobic Gram Negative Bacteria – other than Bacteroides and Parabacteroides spp, Continued

Note: Consult microbiologist regarding the need for susceptibility testing. Susceptibility testing is recommended if organism is sole isolate from sterile body site. For other sites, or if isolated with other organisms, clinical correlation and correlation with Gram stain is required. Generally, susceptibility testing is not recommended if multiple organisms isolated.

At microbiologist's discretion, add comment:
"These organisms are generally susceptible to metronidazole, beta-lactamase inhibitor combination drugs, and carbapenems. Resistance to clindamycin is variable". **(21333)**

Special consideration

<table>
<tr><td>Amoxicillin-clavulanate/ Penicillin/ Piperacillin-tazobactam:</td><td>
<table>
<tr><th>IF…</th><th>THEN…</th></tr>
<tr><td>Penicillin I/R
and
β-lactamase negative</td><td>• This may indicate an altered penicillin binding protein mechanism of resistance.
• Repeat β-lactamase testing
• Consult microbiologist
• If penicillin I/R and β-lactamase negative report both amox/clav and pip/tazo as R.</td></tr>
<tr><td>Piperacillin-tazobactam I/R
and
Amoxicillin-clavulanate S</td><td>• Repeat testing to confirm results
• Consult Microbiologist</td></tr>
</table>
</td></tr>
<tr><td>Meropenem:</td><td>If meropenem I/R, consult microbiologist</td></tr>
<tr><td>Metronidazole:</td><td>Efficient anaerobiasis must be achieved within 1-2 hours of incubation. Failure to do so may result in false resistance result.
Consult microbiologist if metronidazole I / R</td></tr>
</table>

Interpretation For Etest, report actual MIC result. For interpretation (S, I, or R) report according to the nearest higher doubling dilution **(Appendix 1)**.

Use **CLSI** interpretive document for **Anaerobes**.