Table 1: Frequency of Carbapenem Discordance

	Total Number of Isolates (n)	Number of Discordant Isolates (n)	Percentage of Discordant Isolates (%)
Enterobacterales	1524	40	2.6
E. coli	920	11	1.2
Proteus mirabilis	115	2	1.7
Klebsiella oxytoca	42	0	0.0
Klebsiella pneumoniae	349	9	2.6
Klebsiella aerogenes	21	5	23.8
Enterobacter cloacae	77	13	16.9
Pseudomonas aeruginosa	326	20	6.1

Table 2: Frequency of Carbapenem Discordance by Site

	Blood n (%)	Urine n (%)	Sputum/BAL n (%)	Wound n (%)	Sterile n (%)	Misc. n (%)	P-value
Enterobacterales (n=40)	3 (7.5)	21 (52.5)	6 (15)	6 (15)	1 (2.5)	3 (7.5)	0.12
Pseudomonas aeruginosa (n=20)	2 (10)	14 (70)	3 (15)	1 (5)	0 (0)	0 (0)	<0.005

Conclusion. Due to the wide range of susceptibility discordance, clinical implications can be drastic if an institution is relying on susceptibility of one carbapenem to confer susceptibility to another carbapenem.

Disclosures. **All Authors**: No reported disclosures

1235. Roles of Tetracyclines for Treatment of *Stenotrophomonas maltophilia* Pneumonia

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Session: P-72. Resistance Mechanisms

Background. *Stenotrophomonas maltophilia* is a multidrug resistant organism with limited antibiotic treatment options. Sulfamethoxazole-trimethoprim (TMP-SMZ) is considered first line agent based on *in vitro* studies and clinical evidence. Minocycline has been showed to be active on *in vitro* studies and also has been explored in small retrospective studies However, doxycycline in the same class has variable in susceptibility in *in vitro* studies and has not been evaluated for efficacy in treatment of *S. maltophilia* infections The purpose of this research is to compare minocycline and doxycycline to TMP-SMZ for treatment of *S. maltophilia* pneumonia.

Methods. This retrospective, multi-center study evaluated hospitalized patients treated for *S. maltophilia* pneumonia with minocycline, doxycycline, or TMP-SMZ for clinical success, microbiologic success, and recurrence or reinfection within 30 days that required treatment. The inclusion criteria were patients ≥18 years old with *S. maltophilia* confirmed on respiratory culture from January 2013 to November 2020. Patients were classified as treatment with tetracyclines (minocycline or doxycycline) or TMP-SMZ based on definitive agent used for ≥50% of the treatment course and a minimum of four days. Patients with *S. maltophilia* resistant or intermediate to definitive therapy, and patients with combination therapy for treatment for *S. maltophilia* pneumonia were excluded.

Results. A total of 21 patients were included in tetracyclines group and 59 patients included in TMP-SMZ group. There was no difference in clinical success (28.6% vs. 25.4%; P = 0.994) or microbiologic success (n=28, 55.6% vs. 66.4%; P= 0.677) between tetracyclines and TMP-SMZ, respectively. Recurrence or reinfection requiring treatment (n=24) was higher in the tetracyclines group but not statistically significant compared to TMP-SMZ (66.7% vs. 26.7%; P= 0.092). A subgroup analysis showed no difference between doxycycline, minocycline, and TMP-SMZ for these three aims.

Conclusion. Clinical and microbiologic success were similar in patients treated with tetracyclines compared to TMP-SMZ for *S. maltophilia* pneumonia. This data suggests minocycline and doxycycline may be an option to treat *S. maltophilia* pneumonia, but conclusive clinical data continues to be lacking.

Disclosures. **Anthony Gentene, PharmD**, **advisory board with Theravance Biopharma and Mylan** (Consultant)

1236. Update on the *In Vitro* Activity of Ceftaroline against *Staphylococcus aureus* from United States (US) Medical Centers Stratified by Infection Type (2018-2020)

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Session: P-72. Resistance Mechanisms

Background. Ceftaroline was initially approved by the US FDA in 2010 to treat skin and skin structure infection (SSSI) and community-acquired bacterial pneumonia (CABP). FDA approval was extended in 2015 to treat patients with SSSI and CABP who developed bacteremia. Moreover, ceftaroline has also been used off-label to treat other infection types. We evaluated the *in vitro* activity of ceftaroline against *S. aureus* isolated in US medical centers in 2018-2020.

Methods. A total of 9,268 *S. aureus* isolates were consecutively collected from 33 US medical centers in 2018-2020 and susceptibility tested by broth microdilution method against ceftaroline and comparators. Results were stratified by infection type and resistance profile.

Results. Ceftaroline ($MIC_{50/90}$, 0.25/1 mg/L) susceptibility (S) ranged from 98.5% (SSSI) to 95.4% (pneumonia; 97.2% overall [Table]). Ceftaroline retained potent activity and broad spectrum against methicillin-resistant *S. aureus* (MRSA; 41.9% of isolates), with S rates varying from 96.3% (SSSI) to 89.2% (pneumonia; 93.4% overall). Overall S rate to erythromycin (ERY), levofloxacin (LEV), tetracycline (TET), and trimethoprim-sulfamethoxazole (TMP-SMX) were 44.0%, 67.9%, 94.1%, and 97.5%, respectively. Ceftaroline retained good activity against *S. aureus* resistant to ERY (94.8%S), LEV (91.4%S), TET (92.3%S), and/or TMP-SMX (98.7%S). Among the resistant subsets, ceftaroline S rates were generally highest among isolates from SSSI (93.1-100.0%), followed by other infections (81.8-100.0%), bloodstream infections (BSI; 89.4-96.2%), and pneumonia (86.6-98.1%); overall susceptibility was highest among TMP-SMX-R isolates (98.7%), followed by ERY-R (94.8%), MRSA (93.4%), TET-R (92.3%), and LEV-R (91.4%) isolates. Dalbavancin (MIC_{90}, 0.03 mg/L), teicoplanin (MIC_{90}, 0.5 mg/L), and vancomycin (MIC_{90}, 1 mg/L) exhibited complete activity (100.0%S), whereas daptomycin (MIC_{90}, 0.5 mg/L) and linezolid (MIC_{90}, 2 mg/L) were active against >99.9% of isolates.

Conclusion. Ceftaroline remained very active against contemporary (2018-2020) *S. aureus* from US medical centers, independent of infection type. Ceftaroline retained good activity against MRSA and isolates resistant to ERY, LEV, TET, and/or TMP-SMX.

Resistant	% Susceptible to Ceftaroline by Infection Type (no. tested)				
subset	SSSI	Pneumonia	BSI	Other sites	All combined
All isolates	98.5 (4,343)	95.4 (2,260)	96.6 (2,235)	97.4 (430)	97.2 (9,268)
MRSA	96.3 (1,831)	89.2 (959)	91.8 (922)	93.7 (175)	93.4 (3,887)
ERY-R	97.2 (2,251)	91.2 (1,164)	93.6 (1,152)	94.9 (217)	94.8 (4,784)
LEV-R	95.1 (1,312)	86.6 (767)	89.4 (718)	92.5 (147)	91.4 (2,944)
TET-R	93.1 (233)	90.8 (120)	93.3 (89)	81.8 (11)	92.3 (453)
TMP-SMX-R	100.0 (111)	98.1 (52)	96.2 (52)	100.0 (13)	98.7 (228)

Disclosures. **Helio S. Sader, MD, PhD, FIDSA**, **AbbVie (formerly Allergan)** (Research Grant or Support)**Basilea Pharmaceutica International, Ltd.** (Research Grant or Support)**Cipla Therapeutics** (Research Grant or Support)**Cipla USA Inc.** (Research Grant or Support)**Department of Health and Human Services** (Research Grant or Support, Contract no. HHSO100201600002C)**Melinta Therapeutics, LLC** (Research Grant or Support)**Nabriva Therapeutics** (Research Grant or Support)**Pfizer, Inc.** (Research Grant or Support)**Shionogi** (Research Grant or Support)**Spero Therapeutics** (Research Grant or Support) **Mariana Castanheira, PhD**, **AbbVie (formerly Allergan)** (Research Grant or Support)**Bravos Biosciences** (Research Grant or Support)**Cidara Therapeutics, Inc.** (Research Grant or Support)**Cipla Therapeutics** (Research Grant or Support)**Cipla USA Inc.** (Research Grant or Support)**GlaxoSmithKline** (Research Grant or Support)**Melinta Therapeutics, Inc.** (Research Grant or Support)**Melinta Therapeutics, LLC** (Research Grant or Support)**Pfizer, Inc.** (Research Grant or Support)**Qpex Biopharma** (Research Grant or Support)**Shionogi** (Research Grant or Support)**Spero Therapeutics** (Research Grant or Support) **Mariana Castanheira, PhD**, Affinity Biosensors (Individual(s) Involved: Self): Research Grant or Support; Allergan (Individual(s) Involved: Self): Research Grant or Support; Amicrobe, Inc (Individual(s) Involved: Self): Research Grant or Support; Amplyx Pharma (Individual(s) Involved: Self): Research Grant or Support; Artugen Therapeutics USA, Inc. (Individual(s) Involved: Self): Research Grant or Support; Astellas (Individual(s) Involved: Self): Research Grant or Support; Basilea (Individual(s) Involved: Self): Research Grant or Support; Beth Israel Deaconess Medical Center (Individual(s) Involved: Self): Research Grant or Support; BIDMC (Individual(s) Involved: Self): Research Grant or Support; bioMerieux Inc. (Individual(s) Involved: Self): Research Grant or Support; BioVersys Ag (Individual(s) Involved: Self): Research Grant or Support; Bugworks (Individual(s) Involved: Self): Research Grant or Support; Cidara (Individual(s) Involved: Self): Research Grant or Support; Cipla (Individual(s) Involved: Self): Research Grant or Support; Contrafect (Individual(s) Involved: Self): Research Grant or Support; Cormedix (Individual(s) Involved: Self): Research Grant or Support; Crestone, Inc. (Individual(s) Involved: Self): Research Grant or Support; Curza (Individual(s) Involved: Self): Research Grant or Support; CXC7 (Individual(s) Involved: Self): Research Grant or Support; Entasis (Individual(s) Involved: Self): Research Grant or Support; Fedora Pharmaceutical (Individual(s) Involved: Self): Research Grant or Support; Fimbrion Therapeutics (Individual(s) Involved: Self): Research Grant or Support; Fox Chase (Individual(s) Involved: Self): Research Grant or Support; GlaxoSmithKline (Individual(s) Involved: Self): Research Grant or Support; Guardian Therapeutics (Individual(s) Involved: Self): Research Grant or Support; Hardy Diagnostics (Individual(s) Involved: Self): Research Grant or Support; IHMA (Individual(s) Involved: Self): Research Grant or Support; Janssen Research & Development (Individual(s) Involved: Self): Research Grant or Support; Johnson & Johnson (Individual(s) Involved: Self): Research Grant or Support; Kaleido Biosceinces (Individual(s) Involved: Self): Research Grant or Support; KBP Biosciences (Individual(s) Involved: Self): Research Grant or Support; Luminex (Individual(s) Involved: Self): Research Grant or Support; Matrivax (Individual(s) Involved: Self): Research Grant or Support; Mayo Clinic (Individual(s) Involved: Self): Research Grant or Support; Medpace (Individual(s) Involved: Self): Research Grant or Support; Meiji Seika Pharma Co., Ltd. (Individual(s) Involved: Self): Research Grant or Support; Melinta (Individual(s) Involved: Self): Research