

BACKGROUND

Gram Negative Bacteremia (GNB) is frequently encountered among hospitalized patients. In contrast to traditional 14-day lengths of treatment (LOT), recent literature supports a shorter (7-day) LOT for uncomplicated GNB with adequate source control, and the effectiveness of oral antibiotics. The goal of the following is to outline current practices of GNB treatment and identify opportunities for antibiotic stewardship (AS).

METHODS

- This study retrospectively reviewed all cases of uncomplicated GNB at a 528-bed community teaching hospital in Rochester, NY from January 2021 through March 2022.
- Demographic, laboratory, microbiologic, antibiotic therapy data, hospital length of stay, 30-day readmission, 30- and 90-day mortality were collected.
- Exclusions were complicated or polymicrobial bacteremia, deaths during treatment, or prolonged hospitalization due to other medical factors.
- Influences of Infectious Diseases (ID) or AS consult on treatment and outcomes were compared to cases with neither consult.
- Continuous variables were analyzed using unpaired t-tests; categorical variables were analyzed using Fischer's exact test and Chi-square as appropriate.

Table 1*	All Cases	ID Consult	ASP	No ID or ASP	P-value
N	133	24	37	72	NS
Age	67 (61-79)	66 (61-73)	74 (66-74)	67 (59-76)	0.0142
Female, n (%)	73 (55)	10 (42)	18 (49)	45 (63)	NS
Charlson comorbidity index	5.5 (4-7)	6.0 (5-8)	5.6 (4-7)	5.3 (3-8)	NS
Pitt Bacteremia Score	1.7 (0-3)	1.4 (0-2)	1.9 (1.3)	1.8 (0-3)	NS
Highest WBC	17.5 (12.0-21.6)	18.1 (10.9-27.7)	17.3 (12.6-21.2)	17.4 (12.1-21.4)	NS
ICU Admission, n (%)	17 (13)	2 (8)	4 (11)	11 (15)	NS
Length of Stay, days, mean (IQR)	9.5 (5.0-10.0)	11.8 (5.0-14.8)	9.1 (5.0-10.0)	9.0 (4.0-8.0)	NS

* Values represent median and Interquartile Range, unless otherwise specified

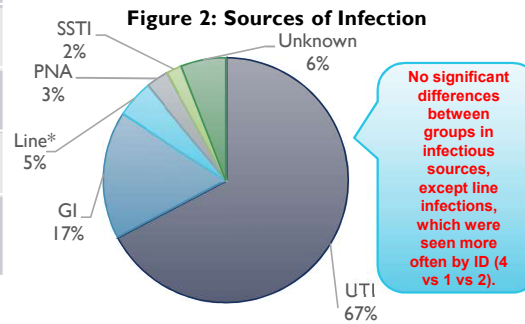
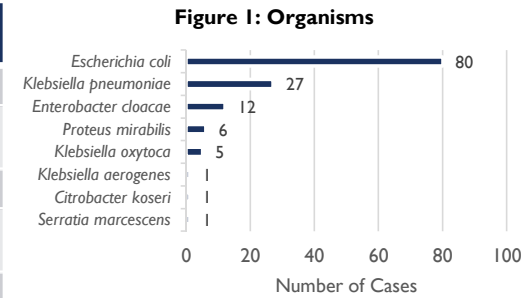
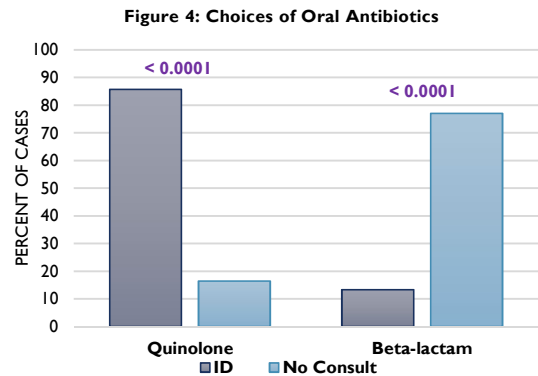
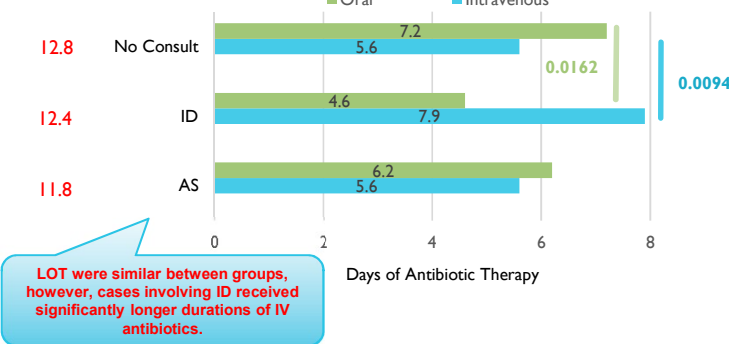


Figure 3: Mean Length of Therapy (LOT) by Route



RESULTS

- 133 cases met inclusion criteria.
- There were no significant differences in baseline demographic, laboratory, or infection severity data between the 3 groups, with the exception of age, as noted in Table 1.
- Microbiologic data were similar across groups, with *E. coli* being the most frequent organism isolated (Figure 1).
- Sources of infection were similar (Figure 2), except central lines being more common in the ID consult group.
- There was a significantly longer course of IV Therapy prescribed by ID consults (Figure 3), and quinolone antibiotics were more likely to be used by ID Consultants (Figure 4).
- There was no significant difference between 30-day readmission, or 30-day and 90-day mortality between the groups.

CONCLUSION

- Patients with GNB continued to receive longer LOTs than current literature recommends.
- Patients with ID Consults (1) Received longer IV therapy than those without, and (2) Were more likely to be prescribed quinolone antibiotics.
- Educational initiatives regarding the safety of shorter treatment, including the efficacy of oral antibiotics, are needed and should include ID specialists.

REFERENCES

- Yahav, Dafna, et al. "Seven versus 14 Days of Antibiotic Therapy for Uncomplicated Gram-Negative Bacteremia: A Noninferiority Randomized Controlled Trial." *Clinical Infectious Diseases*, vol. 69, no. 7, 2018, pp. 1091-1098.
- Tamma, Pranita D., et al. "Association of 30-Day Mortality with Oral Step-down vs Continued Intravenous Therapy in Patients Hospitalized with Enterobacteriaceae Bacteremia." *JAMA Internal Medicine*, vol. 179, no. 3, 2019.