Assessment of Short vs. Long Duration of Therapy for Non-staphylococcal Gram-positive Bloodstream Infections

Alyssa P. Gould, PharmD, BCIDP; Robert Crawford III, PharmD, BCIDP, AAHIVP; Jacinta Chin, PharmD, BCIDP

Novant Health, Department of Pharmacy

Background

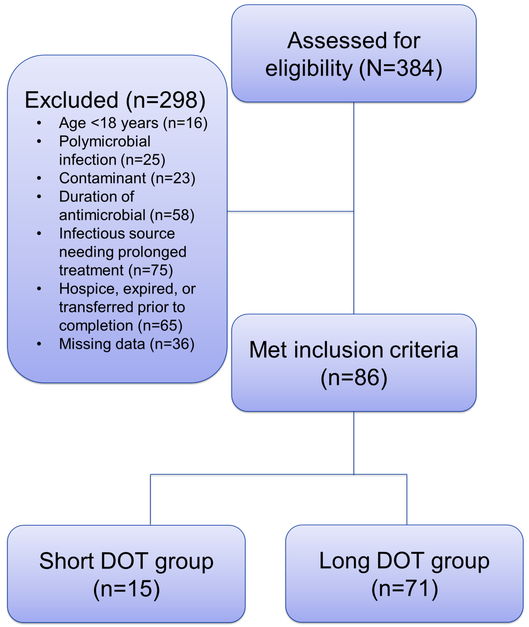
- Numerous recent studies suggest comparable clinical outcomes between short vs. long duration of therapy (DOT) for gram-negative bloodstream infections (BSIs)[1-3]
- Prior IDSA guidelines recommend a minimum DOT of 14 days for BSIs due to *Staphylococcus aureus*[4]
- The optimal antimicrobial DOT for non-staphylococcal gram-positive (GP) BSIs remains unknown[5]
- The purpose of this study was to evaluate clinical outcomes in patients with short (6-10 days) vs. long (11-21 days) duration of therapy for non-staphylococcal GP BSIs

Methods

- **Design**: multicenter, IRB-approved retrospective cohort
- **Study period**: January 1, 2016 – December 31, 2021
- **Inclusion criteria**:
  - Age ≥ 18 years
  - Blood cultures with streptococci or enterococci spp.
  - Initial episode of bacteremia
- **Exclusion criteria**:
  - Polymicrobial bacteremia
  - A single positive blood culture consistent with skin flora
  - Duration of active therapy <6 or >21 days
  - Infectious source requiring prolonged treatment
  - Hospice or death prior to therapy completion
- **Primary endpoint**: 90-day all-cause mortality
- **Secondary endpoints**:
  - 30-day all-cause mortality
  - 30-day recurrence
  - 90-day recurrence
  - Hospital length of stay (LOS)
  - 30-day readmission
- **Data analysis**:
  - Descriptive
  - Categorical data using X^2 or Fisher's exact test
  - Continuous data using student t-test

Results

Figure 1. Enrollment



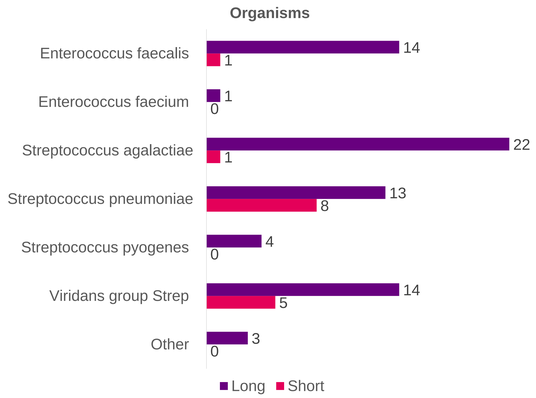


Table 1. Baseline characteristics

Variable	Short DOT (n=15)	Long DOT (n=71)	p-value
Age (years), mean ± SD	64.8 ± 19.7	66.9 ± 15.5	0.663
Female	7 (47)	34 (48)	0.931
Caucasian	13 (87)	60 (85)	0.832
Immunocompromised	3 (20)	12 (17)	0.774
Intravenous drug use	1 (7)	1 (1)	0.220
Pitt bacteremia score, median (IQR)	0 (0-1)	1 (0-2)	0.413
ID consult	5 (33)	51 (72)	0.004
ICU admission	2 (13)	13 (18)	0.644
Total therapy duration, days, mean ± SD	8.8 ± 1.3	15.2 ± 2.3	<0.001

Data represented as n (%) unless otherwise specified

Most common antimicrobial therapies:

- Short DOT: Levofloxacin (n=7), ceftriaxone (n=5), and vancomycin IV (n=5)
- Long DOT: Ceftriaxone (n=47), piperacillin-tazobactam (n=19), levofloxacin (n=16), vancomycin IV (n=15), and linezolid (n=11)

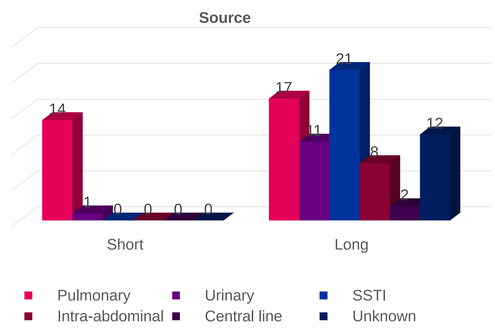


Table 2. Clinical outcomes

Variable	Short DOT (n=15)	Long DOT (n=71)	p-value
90-day mortality	0 (0)	2 (3)	0.511
30-day mortality	0 (0)	4 (6)	0.356
90-day recurrence	0 (0)	0 (0)	1.000
30-day recurrence	0 (0)	0 (0)	1.000
30-day readmission	2 (13)	10 (14)	0.939
Hospital LOS, days, mean ± SD	4.6 ± 4.0	7.0 ± 5.7	0.118

Data represented as n (%) unless otherwise specified

Discussion

- No difference in clinical outcomes between those who received short vs. long duration of therapy
- Short-course group *S. pneumoniae* infections primarily from pulmonary source
- Fewer ID consults in short-course group
- Small sample size, particularly in short-course group
- Plan to continue data collection to increase sample size prior to publication of results
- Hypothesis-generating results; larger studies needed

References

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Disclosures

The authors have nothing to disclose concerning possible financial or personal relationships with commercial entities that may have a direct or indirect interest in the subject matter.