

if withdrawal of care or death occurred within 48 hours of blood culture results or if the infection was associated with a ventricular assist device. Medical records were reviewed for the duration of bacteremia, complications, treatment decisions and clinical outcomes. This study was approved by the Institutional Review Board.

**Results.** One hundred forty-two discrete episodes of SAB were identified with a median age of 54 years (IQR 40–63). Most cases were community-acquired (83.8%) and 33.8% were MRSA. Active injection drug use was present in 22.5% (33.3% MRSA, 17% MSSA). The median duration of bacteremia was 2.6 days (IQR 1.8–4.6) and 3.9 days (IQR 2.2–7.5) for MSSA and MRSA, respectively. The median time to first source control procedure was twice as long with bacteremia over 5 days than with a shorter duration of bacteremia (2.6 vs. 1.3 days). Complication rates increased with bacteremia duration and bacteremia longer than 5 days was associated with significantly higher rates of endocarditis (46.2%,  $P < 0.001$ ), epidural abscesses (35.9%,  $P = 0.001$ ), intracranial infections (12.8%,  $P = 0.02$ ), and presence of at least one endovascular nidus (76.9%,  $P < 0.001$ ) compared with bacteremia less than 5 days (28.4%), but 30 day mortality rates were similar (7.7% and 9.8%, respectively).

**Conclusion.** Complication rates increase significantly with SAB greater than 5 days duration. Early source control and investigation to identify metastatic and especially endovascular foci of infection are paramount in patients with prolonged bacteremia even if complications are not discovered on initial evaluation.

	Total (n=142)	MRSA (n=48)	MSSA (n=94)
Age, median (IQR)	54 (40-63)	48 (39-56)	57 (43-65)
Female (%)	29.6	29.2	29.8
Community acquired (%)	83.8	85.4	83.0
Active IDU (%)	22.5	33.3	17.0
Homelessness (%)	14.1	12.5	14.9
Comorbidities (%)			
> HIV	0	0	0
> Cirrhosis	11.3	6.3	13.8
> Malignancy	11.3	10.4	11.7
> Systemic chemotherapy	7.7	6.3	8.5
> Systemic steroids	5.6	2.1	7.4
> BMT/SOT	4.9	8.3	3.2
CVC associated (%)	17.6	12.5	20.2
Inpatient mortality (%)	6.3	10.4	4.3
30 day mortality (%)	9.2	12.5	7.4
90 day mortality (%)	14.1	18.8	11.7
Infectious diseases consult (%)	91.5	100	87.2
Duration of bacteremia <sup>a</sup>			
> < 3 days	74	18	56
> ≥ 3 days	67	30	37
> ≥ 5 days	39	17	22
Source control procedure (%)	58.5	64.6	55.3

Abbreviations: IDU, injection drug use; BMT, bone marrow transplant; SOT, solid organ transplant; CVC, central venous catheter  
<sup>a</sup>excluding one patient whose bacteremia duration could not be determined due to lack of repeat blood cultures

	Bacteremia < 5 days (N=102)	Bacteremia ≥ 5 days (N=39)	P value
	No. (%)	No. (%)	
Endocarditis	12 (11.8)	18 (46.2)	<0.001
Endovascular graft or device <sup>a</sup>	9 (8.8)	6 (15.4)	0.36
DVT/SVT present	8 (7.8)	6 (15.4)	0.21
Endovascular nidus <sup>b</sup>	29 (28.4)	30 (76.9)	<0.001
Intracranial infection	2 (2.0)	5 (12.8)	0.02
Epidural abscess or spinal OM/discitis <sup>c</sup>	8 (7.8)	14 (35.9)	0.001
Septic arthritis	9 (8.8)	7 (17.9)	0.14
Extra-axial osteomyelitis	12 (11.8)	7 (17.9)	0.41
Pleural empyema	2 (2.0)	2 (5.1)	0.31
Other deep abscess	2 (2.0)	5 (12.8)	0.02
30 day mortality	10 (9.8)	3 (7.7)	1.0
90 day mortality	15 (14.7)	5 (12.8)	1.0
Days to first source control procedure, median (IQR)	1.3 (0.3-3.0)	2.6 (0.4-7.0)	

Abbreviations: DVT, deep vein thrombosis; SVT, superficial vein thrombosis; OM, osteomyelitis  
<sup>a</sup>ventricular assist devices (VADs) were excluded  
<sup>b</sup>endovascular nidus: endocarditis and/or endovascular graft or device and/or DVT/SVT present  
<sup>c</sup>8 of 14 patients with bacteremia ≥ 5 days had both epidural abscess/OM and an endovascular nidus. No patients with bacteremia < 5 days had both epidural abscess/OM and an endovascular nidus.

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## 210. Step-down from IV to oral therapy in patients with bacteremia due to Enterobacteriaceae: fluoroquinolones (FQ) vs. β-lactams (BL) or trimethoprim-sulfamethoxazole (TMP-SMX)

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**Background.** Patients with Gram-negative bloodstream infection (GN BSI) commonly transition from intravenous (IV) to oral therapy after clinical improvement. Some clinical reports suggest similar outcomes with oral step down to TMP/SMX or BL compared with FQ in uncomplicated GN BSI, despite questionable pharmacodynamic target achievement with oral administration of the former. We sought to compare clinical outcomes in Stanford Health Care (SHC) patients with GN BSI who received step-down therapy with FQ vs. BL or TMP/SMX.

**Methods.** This was a retrospective cohort study of patients treated at SHC from 1/2010–December 2018 for Enterobacteriaceae bacteremia with oral stepdown to FQ vs. non-FQ (TMP-SMX, BL) initiated by day 7 of therapy. Preliminary data were obtained from electronic health records (EHR) and analyzed via the GreenButton informatics consult service at SHC. The primary outcome was 30-day mortality. Secondary outcomes included 30 and 90-day recurrent BSI, and 90-day *C.difficile* infection (CDI). Survival analysis was completed for each outcome using the log-rank test to calculate hazard ratio (HR). Cohorts were compared without adjustment and with basic matching controlling for age, sex, length of EHR record, and number of encounters with SHC.

**Results.** Of 529 eligible patients, 414 were in the FQ vs. 115 in the non-FQ oral stepdown cohorts. In unadjusted analysis, 30-day mortality was similar between the FQ and non-FQ groups, (5.8% vs. 6.1%, HR 1.06; 95% CI, 0.46–2.46),  $P = 0.89$ . Thirty-day recurrent BSI (1.2% vs. 2.6%, HR 2.20; 95% CI, 0.53–9.20)  $P = 0.27$  and 90-day CDI rates (3.1% vs. 1.7%, HR 0.56; 95% CI 0.13–2.48,  $P = 0.44$ ) were similar between groups. Ninety-day recurrent BSI was higher in the non-FQ group (1.9% vs. 5.2%, HR 1.38; 95% CI, 0.31–6.15,  $P = 0.0485$ ). (Table 1) In matched analysis ( $n = 61$ ), 30-day mortality was similar between groups (5.8% vs. 6.1%; HR 1.06, 95% CI 0.46–2.46,  $P = 0.89$ ). Matched analysis found no statistically significant differences between groups for all secondary outcomes. (Table 2)

**Conclusion.** In this study, 30-day mortality was not different among patients that received oral step down to an FQ vs. non-FQ for the treatment of Enterobacteriaceae bacteremia. Larger, prospective trials are warranted to validate observations and determine optimal dosing of oral antibiotics in this setting.

Table 1. Primary and Secondary outcomes (unadjusted analysis)

Cohort	FQ (n=414)	Non-FQ (n=115)	Chi-Squared	p-value	HR (95% CI)
<b>Primary Outcome</b>					
30-day mortality	24 (5.8%)	7 (6.1%)	0	0.89	1.06 (0.46-2.46)
<b>Secondary Outcomes</b>					
30-day recurrent bloodstream infection	5 (1.2%)	3 (2.6%)	1.2	0.30	2.20 (0.53-9.20)
90-day recurrent bloodstream infection	8 (1.9%)	6 (5.2%)	3.9	0.0485	2.78 (0.96- 8.00)
90-day <i>C.difficile</i> infection	13 (3.1%)	2 (1.7%)	0.6	0.44	0.56 (0.13-2.48)

Table 2. Primary and Secondary outcomes (matched)

Cohort	FQ (n=61)	Non-FQ (n=61)	Chi-Squared	p-value	HR (95% CI)
<b>Primary Outcome</b>					
30-day mortality	2 (3.3%)	5 (8.2%)	1.3	0.25	2.55 (0.49-13.14)
<b>Secondary Outcomes</b>					
30-day recurrent bloodstream infection	2 (3.3%)	3 (4.9%)	0.2	0.64	1.52 (0.26-9.22)
90-day recurrent bloodstream infection	3 (4.9%)	4 (6.6%)	0.2	0.68	1.38 (0.31- 6.15)
90-day <i>C.difficile</i> infection	2 (3.3%)	1 (1.6%)	0.3	0.57	0.51 (0.05- 5.61)

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## 211. Coxiella burnetii: 7 Years of Experience at a Tertiary-Care Center

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**Background.** Q fever is a zoonotic disease caused by *Coxiella burnetii*. Primary infection can progress to persistent infection irrespective of initial symptomatology. Our aim is to describe the clinical features, treatment, risk of progression, use of prophylaxis, and outcomes of *Coxiella burnetii* infection at our institution.