Open Forum Infectious Diseases

MAJOR ARTICLE

Comparisons of 30-Day Admission and 30-Day Total Healthcare Costs Between Patients Who Were Treated With Oritavancin or Vancomycin for a Skin Infection in the Outpatient Setting

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Objective. Hospital admission is a key cost driver among patients with skin and soft tissue infections (SSTI). Data suggest that many SSTI patients are hospitalized unnecessarily and can be managed effectively and safely in an outpatient setting at a substantially lower cost. Oritavancin (ORI) is a single-dose treatment that has the potential to shift care from the inpatient to the outpatient setting. This study sought to compare the 30-day hospital admission rates and mean healthcare costs among SSTI patients who received outpatient ORI or vancomycin (VAN).

Method. Over a 1-year period, outpatient prescription claims for VAN and ORI among patients with SSTIs and no hospitalization in past 3 days were for VAN and ORI were analyzed using a retrospective cohort analysis of the Truven Health MarketScan Databases.

Results. During the study period, 120 and 6695 patients who received ORI and VAN, respectively, met inclusion criteria. Groups were well matched at baseline. After covariate adjustment, patients who received ORI had a significantly lower 30- day admission rate versus patients who received VAN (6.1% vs 16.2%, respectively; $P = .003$). Mean healthcare costs 30-day post index were comparable between ORI and VAN patients ($12 695 vs $12 717, respectively; $P = 1.0$).

Conclusions. Results suggest that ORI provides a single-dose alternative to multidose VAN for treatment of SSTI in the outpatient setting and may result in lower 30-day hospital admission rates.

Key words: oritavancin, outcomes, skin infections, vancomycin.

INTRODUCTION

With the introduction of the Affordable Care Act in 2010, there is an increased emphasis on the quality and efficiency of healthcare delivery [1]. One potential target area that healthcare systems should consider is patients with skin and soft tissue infections (SSTIs). In the United States, SSTIs are the 7th most common diagnosis, resulting in annual costs in excess of 15 billion dollars [2]. One way to improve the efficiency of care for patients with SSTIs is to shift care from the inpatient to the outpatient setting [3]. Hospital admissions account for >80% of costs associated with management of patients with SSTIs and data suggest that many patients are hospitalized unnecessarily and can be managed effectively and safely in an outpatient setting at a substantially lower cost [4].

One potential way to shift the site of care of SSTI patients is through the use of lipoglycopeptide antibiotics like oritavancin (ORI). Oritavancin is a single-dose intravenous (IV) antibiotic that is currently indicated for the treatment of patients with SSTIs [5]. In 2 phase III trials, a single IV dose of ORI had comparable efficacy and safety to 7–10 days of vancomycin (VAN) [6, 7]. Across these 2 trials, 792 patients were treated solely in the outpatient setting and very few patients in the ORI group (1.3%) required subsequent care in the inpatient setting following outpatient treatment [8]. Although these data support ORI's use in the outpatient setting, clinicians need evidence beyond what is provided in clinical trials to determine the value of new agents. This is particularly important in populations frequently excluded from trials. Data also are needed on healthcare resource metrics that are important to US healthcare systems, such as 30-day hospital admissions and 30-day healthcare costs. This study aims to describe a retrospective multicenter cohort analysis comparing the 30-day hospital subsequent admission rate and mean 30-day healthcare costs among SSTI patients who received either ORI or VAN in an outpatient setting.

Received 24 July 2019; editorial decision 28 October 2019; accepted 31 October 2019.

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Open Forum Infectious Diseases®

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DOI: 10.1093/ofid/ofz475

METHODS

Study Design and Population

This was a retrospective, observational cohort analysis of the IBM MarketScan databases between January 1, 2016, and November 31, 2016. The MarketScan Commercial Claims and Encounters Database contains the inpatient, outpatient, and prescription drug experience of approximately 137.6 million employees and their dependents covered under a variety of fee-for-service and managed care health plans. The MarketScan Medicare Supplemental and Coordination of Benefits (COB) Database contains the healthcare experience (both medical and pharmacy) of approximately 10.2 million retirees with Medicare supplemental insurance paid for by employers between 1995 and 2016. Both the Medicare-covered portion of payment and the employer-paid portion are included in this database.

This study examined patients who were >18 years old who met the following criteria: (1) a prescription or medical claim for ORI or VAN in an outpatient setting, the date of which was the index date, (2) a nondiagnostic medical claim with a skin infection diagnosis (cellulitis, abscess, surgical or traumatic wound infection, and other skin infections) ≤7 days prior and 3 days after the index date (Supplementary Table 1), (3) ≥180 days of continuous enrollment in medical and pharmacy benefits prior to index day (baseline period), and (4) ≥60 days of continuous enrollment in medical and pharmacy benefits post index day. Patients were excluded if they were hospitalized in the 3 days leading up to the index date.

Data Elements

Demographic Characteristics

Demographic characteristics were measured on the index date and included the following: (1) age, (2) gender, (3) US Census Bureau geographic region, (4) urban or rural residence, (5) insurance plan type, (6) payer: commercial or Medicare, and (7) index month.

Clinical Characteristics

Clinical characteristics data gathered included both medical history and current comorbidities. Clinical characteristics that were measured during the baseline period (180 days prior to index day) included the following: (1) Charlson Comorbidity Index (CCI) [9], (2) comorbid conditions, (3) prior antibiotics, and (4) prehealthcare resource utilization. Select skin infection characteristics that were measured during 7-day prior and 3-day on and after the index date included type, site, and severity of infection. Infection severity at skin infection diagnosis listed as life-threatening, nonlife threatening with systemic symptoms, or neither life-threatening nor systemic symptoms [4]. Complicating infection conditions (ie, bacteremia, endocarditis, gangrene, meningitis, necrotizing fasciitis, osteomyelitis, periprosthetic joint/device/graft infection, and septicemia/sepsis) were collected during 30-day prior and 3-day on and after the index date period.

Post Index Outcomes

Post index outcomes included both subsequent hospital admissions and total healthcare resource utilization in the 30 days post index. All-cause healthcare utilization were reported by type of service (inpatient, emergency department [ED], outpatient, pharmaceutical, and total healthcare) and were evaluated during the 30-day follow-up period. Healthcare resource utilization included subsequent (1) inpatient admission, (2) ED visits, (3) outpatient medical services that include physician office visits and other outpatient service costs, (4) outpatient pharmacy prescription costs, (5) all medical costs including costs for injectable drugs and associated administration costs, and (6) total healthcare costs that included costs for injectable drugs, associated administration costs, and additional outpatient pharmacy costs.

Statistical Analysis Plan

A series of bivariate analyses were conducted to compare (1) all baseline study variables between treatment groups (ORI vs VAN), (2) 30-day subsequent hospital admissions between treatment groups, and (3) 30-day healthcare resource utilization between treatment groups. Multivariable models for 30-day subsequent hospital admissions (logistic regression) and 30-day healthcare costs (generalized linear models with gamma-distributed error and log link function) were conducted. Any variable that was associated with outcome of interest in bivariate analysis with a P value <.05, prevalence of at least 5% in the study population, and measured during baseline or on index date, was considered for model entry.

RESULTS

There were 120 patients in the ORI group and 6695 in the VAN group to comprise a total of 6815 patients who met the study inclusion criteria. Baseline comparison between ORI and VAN are show in Tables 1 and 2. Overall, the groups were well matched at baseline. There were no significant differences in demographics, preclinical comorbidities, type of skin infection at diagnosis, infection severity at diagnosis, or prehealthcare resource utilization. Variables associated with treatment groups at baseline with a P value <.05 include prior antibiotic use and site of infection at diagnosis, which were more pronounced in the ORI treatment group. Patients in the ORI treatment group were less likely than patients in the vancomycin treatment group to have a claim for an oral antibiotic post index date (67.5% vs 83.8%, respectively; P value <.05).

Bivariate 30-day resource utilization outcome comparisons are shown in Table 3 and Supplementary Table 2. In the unadjusted analysis, patients receiving ORI had a significantly lower 30-day subsequent hospital admission rate compared to those receiving VAN (5.8% ORI vs 16.2% VAN; P = .002). In the multivariate analysis, the rates were 6.1% and 16.2%, respectively (P = .003; Table 4). Thirty-day mean healthcare costs were similar between

Table 1. Demographics

Demographics	Oritavancin N = 120	Vancomycin N = 6695	*P* Value
Age (mean, SD)	54.9 (16.8)	52.8 (16.5)	.18
Age group (N, %)			.66
18–34	16 (13.3%)	993 (14.8%)	
35–44	12 (10%)	962 (14.4%)	
45–54	29 (24.2%)	1523 (22.7%)	
55–64	39 (32.5%)	1941 (29.0%)	
65+	24 (20%)	1276 (19.1%)	
Sex (%, N)			.71
Male	68 (56.7%)	3680 (55.0%)	
Female	52 (43.3%)	3015 (45.0%)	
Insurance plan type (N, %)			.018
Comprehensive/indemnity	12 (10%)	930 (13.9%)	
EPO/PPO	67 (55.8%)	3506 (52.4%)	
POS/POS with capitation	19 (15.8%)	572 (8.5%)	
HMO	5 (4.2%)	590 (8.8%)	
CDHP/HDHP	17 (14.2%)	987 (14.7%)	
Unknown	0 (0%)	110 (1.6%)	
Primary payer(%)			.54
Commercial	93 (77.5%)	5339 (79.7%)	
Medicare	27 (22.5%)	1356 (20.3%)	
Geographic region			.001
Northeast	10 (8.3%)	765 (11.4%)	
North Central	19 (15.8%)	1721 (25.7%)	
South	82 (68.3%)	3347 (50%)	
West	8 (6.7%)	846 (12.6%)	
Unknown	1 (0.8%)	16 (0.2%)	
Population density			.28
Urban	97 (80.8%)	5635 (84.2%)	
Rural	22 (18.3%)	1045 (15.6%)	
Unknown	1 (0.8%)	15 (0.2%)	
Index month (N, %)			.22
January 2016	5 (4.2%)	721 (10.8%)	
February 2016	9 (7.5%)	537 (8.0%)	
March 2016	16 (13.3%)	635 (9.5%)	
April 2016	15 (12.5%)	582 (8.7%)	
May 2016	14 (11.7%)	637 (9.5%)	
June 2016	14 (11.7%)	671 (10.0%)	
July 2016	10 (8.3%)	841 (12.6%)	
August 2016	16 (13.3%)	733 (10.9%)	
September 2016	9 (7.5%)	674 (10.1%)	
October 2016	12 (10.0%)	635 (9.5%)	

Abbreviations: CDHP, consumer-driven healthplan; EPO, exclusive provider organization; HDHP, high deductible healthplan; HMO, health maintenance organization; POS, point-of-service; PPO, preferred provider organization; SD, standard deviation.

the groups (Table 3). In the unadjusted analysis, patients receiving ORI had an average 30-day healthcare cost of $10 096, and patients receiving VAN had an average healthcare cost of $12 779 ($P = .3$). In the multivariate analysis, the mean (SD) costs were $12 695 and $12 717, respectively ($P = .98$). Comparisons of 30-day, all-cause healthcare utilization between treatment groups by type of service are shown in Supplementary Table 2. Other variables associated with each outcome of interest in the multivariate analyses are shown in Tables 4 and 5.

DISCUSSION

Antibiotics are the cornerstone of therapy for patients with SSTIs of moderate to severe severity, particularly in those with unstable comorbidities [10]. Treatment of these patients with SSTIs typically involves the use of IV antibiotics, which are dosed multiple times a day for an extended duration. Though early transition to oral from IV therapy may be 1 strategy to minimize the use of IV antibiotics, treatment challenges still exist. Therapies often require the use of 2 different oral

Table 2. Preclinical Characteristics

Preclinical Characteristics	Oritavancin	Vancomycin	*P* Value
	N = 120	N = 6695	
Preclinical Characteristics			
Deyo Charlson Comorbidity Index (mean, SD)[1]	1.3 (1.8)	1.5 (2.2)	.41
Comorbid conditions[a] (%)			
Obesity	25.0%	19.0%	.10
Diabetes without chronic complication	22.5%	26.2%	.36
Depression	17.5%	15.4%	.53
Diabetes with chronic complications	15.0%	15.5%	.88
Chronic pulmonary disease	14.2%	10.7%	.23
Renal failure	13.3%	11.8%	.61
Cancer (nonleukemia)	13.3%	10.5%	.31
Peripheral vascular disease	8.3%	7.2%	.63
Connective tissue disease	6.7%	9.1%	.35
Cerebrovascular disease	5.0%	4.2%	.68
Prior antibiotics[a]			
Beta-lactam agent	50.0%	49.9%	.98
Fluoroquinolone	26.7%	20.3%	.09
Lincosamide	22.5%	14.2%	.01
Tetracycline	22.5%	14.1%	.01
Lipoglycopeptide (daptomycin)	11.7%	0.2%	<.001
Glycopeptide	10.8%	3.7%	.001
Macrolide	10.0%	10.5%	.86
Oxazolidinone	4.2%	1.0%	.10
Other	31.7%	26.1%	.17
Type of skin infection at diagnosis[b]			
Cellulitis/abscess	90.0%	86.6%	.27
Wound infection	10.0%	14.4%	.17
Other skin infections	17.5%	14.0%	.27
Site of infection at diagnosis[b]			
Lower extremity	58.3%	42.0%	.001
Upper extremity	16.7%	19.2%	.48
Limb, unspecified	16.7%	10.1%	.02
Abdomen/pelvis	11.7%	14.0%	.46
Chest/trunk	3.3%	3.9%	1
Unspecified	47.5%	44.6%	.53
Infection severity at diagnosis[b]			
Life-threatening	16 (13.3%)	841 (12.6%)	.80
Nonlife-threatening but with systemic symptoms	17 (14.2%)	1279 (19.1%)	.17
Neither life threatening nor systemic symptoms	91 (75.8%)	4994 (74.6%)	.76
Complications[c] (N, %)			
Bacteremia	6 (5.0%)	197 (2.9%)	.17
Endocarditis	0 (0%)	69 (1.0%)	.64
Gangrene	3 (2.5%)	152 (2.3%)	.75
Meningitis	0 (0%)	16 (0.2%)	1.0000
Necrotizing fasciitis	2 (1.7%)	42 (0.6%)	.18
Osteomyelitis	15 (12.5%)	761 (11.4%)	.70
Periprosthetic joint/device/graft infection	5 (4.2%)	408 (6.1%)	.38
Septicemia/sepsis	17 (14.2%)	717 (10.7%)	.23
Pre-Healthcare Resource Utilization[a]			
Prior inpatient hospitalization	43.3%	36.1%	.10
Prior ER visit	43.3%	46.1%	.55
Prior outpatient service	98.3%	95.4%	.13
Patients with pharmacy claim	95.0%	92.5%	.31
Total healthcare costs (mean, [SD])	$31 280 (47 354)	$35 183 (74 109)	.57
Median (IQR)	$16 308 (29 290)	$10 389 (36 902)	

Abbreviations: ER, emergency room; IQR, interquartile range; SD, standard deviation.

[a]Measured during the baseline period (180 days prior to index day).

[b]Measured during 7-day prior and 3-day on and after the index date.

[c]Measured during 30-day prior and 3-day on and after the index date.

Table 3. Comparison of Outcomes

Outcomes	Oritavancin	Vancomycin	*P* Value
Unadjusted Outcomes			
30 day subsequent admission rates	5.80%	16.20%	.002
Mean healthcare costs	$10 096 (8865)	$12 779 (28 773)	.30
Adjusted Outcomes			
30 day subsequent admission rates	6.10%	16.20%	.003
Mean healthcare costs	$12 695	$12 717	.98

antibiotics to cover all suspected pathogens and many oral therapies are dosed several times a day [10]. Regardless of dosing frequency and number of agents prescribed, medication adherence is another major concern. In an assessment of the relationship between adherence to oral antibiotics and postdischarge clinical outcomes in the treatment of SSTIs, Eells et al found that adherence to oral antibiotics was only ~50% and that those who did not take their medications as prescribed had higher 30-day relapse rates [11]. Continuation with IV therapy also is problematic. The increased secondary infection risks associated with indwelling vascular lines are well-documented. Similar to oral therapies, adherence is reported to be low with IV antibiotic treatment in the outpatient setting [12–14].

There is now an opportunity to greatly limit the length of therapy with the approval of the lipoglycopeptide antibiotics [5]. Oritavancin is a recently approved lipoglycopeptide antibiotic and is potential treatment in the outpatient setting due to its one-time fixed dose schedule with no requirement for therapeutic drug monitoring. In phase III trials (SOLO I/II), a single dose of ORI had comparable efficacy and safety to vancomycin in the treatment of outpatient SSTI [6–8]. Although clinical trials to date have had positive results to support their use in the outpatient setting, clinicians need evidence beyond these trials to determine the value of lipoglycopeptides in real world practice as only a narrow population is studied in phase III studies [15]. In addition, outcome metrics important to hospitals, including cost and hospital admission and readmission rate, are typically not included in these preliminary studies. Accordingly, we analyzed the economic and clinical outcomes of SSTI treatment in the outpatient setting with ORI using multiple healthcare databases.

Overall, there were 2 notable findings from this study that have important implications for healthcare systems seeking to improve the efficiency of care for patients with SSTIs. First, there was a confirmed difference in 30-day subsequent hospital admissions between patients who received ORI relative to VAN. Over 16% of patients who received VAN required subsequent hospital care. In contrast, only 6% required later hospital care in the ORI group. This admission rate aligns with data from the outpatient cohort in the SOLO trials, where only 5 patients treated with ORI in the outpatient cohort were admitted to a hospital posttreatment, compared to 9 of 400 patients (2.3%) in the vancomycin group [8]. A low admission rate is a key metric that hospitals look for when shifting care to the outpatient setting in order to minimize subsequent care in the hospital due to inadequate management in the outpatient setting [16].

Although there was a difference in 30-day subsequent hospital admission rates between the 2 treatment courses, overall 30-day costs were similar. The major component of 30-day healthcare costs in the ORI group was outpatient service visits,

Table 4. Predictors of 30-Day Subsequent Hospital Admission in Multivariate Analysis

Patient Characteristics	Odds Ratio	Lower 95% Confidence Interval	Upper 95% Confidence Interval	*P* Value
Oritavancin	0.31	0.14	0.67	.003
Vancomycin	1	reference		
Decade increase in age	0.98	0.94	1.03	.36
Charlson Comorbidity Index	1.06	1.03	1.1	<.001
Any patient service during baseline	0.7	0.53	0.92	.01
10% increase in baseline total cost	1.003	1	1.01	.10
Life-threatening condition	5.8	4.9	6.87	<.001
Nonlife threatening condition	2.33	1.94	2.81	<.001
Neither life threatening nor systemic symptoms	1	reference		
Cellulitis/abscess skin infection diagnosis	1.2	0.94	1.54	.14
Wound infection diagnosis	1.49	1.2	1.85	<.001
Other skin infection diagnosis	1.25	1.02	1.54	.03
Upper extremity infection site	1.06	0.88	1.28	.53
Abdomen/pelvis infection site	1.22	1	1.48	.05

Table 5. Predictors of 30-Day Healthcare Cost in Multivariate Analysis

Patient Characteristics	Cost Ratio	Lower 95% Confidence Interval	Upper 95% Confidence Interval	*P* Value
Oritavancin	0.998	0.837	1.19	.98
Vancomycin	1	reference		
Decade increase in age	0.96	0.94	0.97	<.001
Charlson Comorbidity Index	1.09	1.08	1.11	<.001
Any patient service during baseline	0.84	0.76	0.92	<.001
Life-threatening condition	2.67	2.49	2.87	<.001
Nonlife threatening condition	1.28	1.19	1.37	<.001
Neither life threatening nor systemic symptoms	1	reference		
Cellulitis/abscess skin infection diagnosis	0.93	0.85	1.02	.14
Wound infection diagnosis	1.11	1.02	1.21	.01
Other skin infection diagnosis	1.19	1.11	1.29	<.001
Upper extremity infection site	0.92	0.86	0.97	.01
Abdomen/pelvis infection site	1.09	1.02	1.17	.02

which captured the drug acquisition and administration costs associated with ORI (Supplementary Table 2). In contrast, the major 30-day cost drivers in the VAN group were derived largely from inpatient admissions, ED visits, and outpatient services. At first glance, the comparable 30-day costs suggest that efficiency of care is similar. Although this is true, this does not take into account patient perspective and patient-reported outcomes, which are increasingly important metrics for healthcare systems. In a survey conducted across 6 US hospital emergency departments by Almarzoky et al, it was found that both treatment at home and single IV dose therapy were the most preferred among patients being treated for SSTIs [17]. Vancomycin requires multiple doses per day, a line must be kept in place for the duration of treatment, and serum concentrations must be checked and monitored frequently [10]. Oritavancin is 1 dose given in a healthcare setting with no subsequent injections or monitoring needed. Another important patient-centered outcome is out-of-pocket expenses. Patients covered by Medicare part B typically pay 20% of the costs associated with each visit for a parenteral antibiotic infusion [18]. This needs to be factored when comparing treatments as well. In addition, indirect costs of extra time, travel, and inconvenience of receiving IV therapy for 7–10 days needs to be factored as well.

Several things should be noted when interpreting the findings. This was a retrospective observational multicenter cohort analysis, and, as such, it is subject to all of the limitations associated with this study design. Patients were categorized using International Classification of Diseases, 10th Revision, Clinical Modification skin infectious diagnosis codes and were classified into comorbid condition groups based on their CCI score. Although this is an efficient means to collect data, it neglects to fully describe the clinical variations associated with each individual patient. It is possible that not all of the symptoms or conditions present were coded properly or fully reported in the CCI disease severity system. The average duration of vancomycin therapy could not be determined readily from the administrative database used in this study. The number of medical claims associated with each agent was only available in the database, and days of therapy were not estimated from these data as it was outside the scope of the study. Another issue is that the healthcare cost data were based on paid amounts of adjudicated claims, which included insurer and health plan payments as well as patient cost-sharing. This cost-sharing took place in the form of copayments, deductibles, and coinsurance; due to these data collection methods, the costs may not be generalizable to all healthcare plans.

It is important to note that the CCI, presence of comorbid conditions, receipt of prior antibiotics, and prehealthcare resource utilization were measured during the baseline period, which was 180 days prior to index day (start of ORI or VAN). If one considers that prehealthcare resource utilization and the prior antibiotic received shown in Table 2 reflects the 180 days prior to index day, we believe our study population is consistent with typical SSTI patients who receive IV antibiotics in the outpatient setting as many of these patients often receive an initial course of oral antibiotics and many have prior hospitalizations [4, 19–21]. Unfortunately, rate of hospital admissions in the 30 days prior to the index day were not assessed as part of this study. The database also did not include information on the antibiotics received, if any, during their prior admissions. To minimize the effect of prior hospitalization on observed outcomes, we purposefully excluded patients that were hospitalized in the 3 days leading up to the index date. By excluding patients that were recently admitted, we believe we were able to examine the outcomes of patients who were treated with ORI or VAN for a skin infection in the outpatient setting versus the stepdown care posthospital discharge. However, the potential does exist that treatment received by

some patients may have represented only a continuation of therapy to complete a certain prespecified duration for an infection that already resolved. Although this may have been true, we do not believe the percentage of patients receiving step-down-up therapy would have been differentially distributed between treatment groups.

It is unclear how providers' treatment preference (ie, prescribing bias) influenced the results, if any. We also could not ascertain why patients were admitted after receiving oritavancin and vancomycin, because administrative databases do not include the provider's specific reason(s) for admissions. In large part to this, we purposefully examined all-cause versus infection-related 30-day healthcare resource utilization in the study. We believe this negates any potential concerns with undercoding of infection-related claims and best reflects the total healthcare burden in the post therapy timeframe (ie, 30-days) that is of greatest interest to the Centers for Medicare and Medicaid Services (CMS), payers, and US healthcare systems [22].

This was a hypothesis screening study and no hypotheses were specified a priori. Therefore, no power calculations were conducted. The hospital admission rates observed in this study were considerably higher than those reported in the outpatient cohort from the SOLO trials [8]. This is likely a function of the inherent differences between phase III efficacy trials and real-world effectiveness studies. Most notably, this study included a broader patient population and many patients included in this study were excluded from the SOLO trials. However, the hospital admission rates observed in this study are consistent with those reported in the literature [23]. Future, well-powered comparator studies are needed to validate the findings from this study. As this study did not evaluate the effect of therapy duration on outcomes, its impact should be considered in future studies.

In the era of value-based care, it is important to develop patient-centric treatment approaches that maintain or improve quality and increase efficiency. Results from this study suggest that ORI may provide a single-dose alternative to multidose VAN for treatment of SSTIs in the outpatient setting and may result in lower 30-day subsequent hospital admission rates while maintaining similar costs. From the patient perspective, shifting care from the inpatient to outpatient setting with the use of a single dose lipoglycopeptide antibiotic, such as ORI, has the potential to increase their satisfaction. As this was a retrospective, hypothesis screening study, future randomized multicenter comparator studies are needed to validate the findings from this study. Furthermore, future studies should collect patient experience data as part of the benefit-risk assessment given the growing focus on patient-centeredness in health care. Finally, the impact of treatment duration on outcomes should be considered in future studies.

Supplementary Data

Supplementary materials are available at *Open Forum Infectious Diseases* online. Consisting of data provided by the authors to benefit the reader, the posted materials are not copyedited and are the sole responsibility of the authors, so questions or comments should be addressed to the corresponding author.

Acknowledgments

Financial support. This study was supported by Melinta Therapeutics, Morristown, NJ.

Potential conflicts of interest. T.P.L. reports the following: Melinta: consultant, scientific advisor, and speaker's bureau; Motif: consultant and scientific advisor; Paratek: consultant, scientific advisor, and consulting fee; Sunovion: speaker; and Merck & Co: consultant and grant recipient. E.P. is employed by IBM Watson Health as a consultant and received funding from The Medicines Company to conduct this study. M.R. is an employee of Melinta Therapeutics, Medical Affairs, Morristown, NJ. All other authors: No reported conflicts of interest. All authors have submitted the ICMJE Form for Disclosure of Potential Conflicts of Interest. Conflicts that the editors consider relevant to the content of the manuscript have been disclosed.

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