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Background. Dalbavancin (DAL) received Food and Drug Administration (FDA) approval for the treatment of acute bacterial skin and skin structure infections (ABSSSI) caused by Gram-positive organisms including Methicillin-resistant *Staphylococcus aureus* (MRSA). Due to its unique activity and dosing schedule, use in non-FDA approved indications has been increasing. We evaluated the clinical and safety outcomes of patients treated with DAL for various infections.

Methods. A multicenter, retrospective observational study was conducted from April 2017 to February 2019. We included adult patients who received 1 dose of DAL for any indication. The primary outcome was clinical success defined as 30-day survival from DAL initiation, resolution of signs and symptoms of infection, and absence of therapy escalation/change. Reasons for DAL therapy selection were also investigated.

Results. A total of 30 patients were included. The median age was 49 (35–58) years, 50% were female and 93.3% were Caucasian. Median APACHE II score was 9 (5–12). Persons who inject drugs (PWID) comprised 50%. Common DAL indications were bacteremia (53.3%), bone and joint infections (33.3%) and ABSSSI (26.7%). Pathogens were MRSA (43.3%), coagulase-negative Staphylococci (23.3%) and methicillin-susceptible *S. aureus* (MSSA) (13.3%). Previous antibiotics were administered in 93.3% of patients for a median of 9 (7–15) days and (13.3%) received combination antibiotic therapy with DAL. In a subgroup of patients with confirmed microbiological eradication (73.3%), DAL was initiated at a median of 8 days (4–14) after clearance. Clinical success was achieved in 80% of patients and 10% were de-escalated to oral therapy. Rash/pruritus and hypotension occurred in two and one patient, respectively. DAL was selected because of ease of administration (60%), inability to be discharged with a line (43.3%), poor candidacy for outpatient therapy (36.7%), and/or inadequate adherence (30%).

Conclusion. DAL appears to be well tolerated and results in high clinical success. Larger studies with longer follow would be valuable to more precisely define the role of DAL in complicated Gram-positive infections, particularly in comparison to other long-acting lipoglycopeptides.

Disclosures. All authors: No reported disclosures.

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201. Safety and Effectiveness of Daily vs. Every Other Day Dosing of Daptomycin in Patients with Renal Insufficiency

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Background. Daptomycin administered at 48-hour (q48h) intervals is recommended in patients with renal impairment. Our institution utilizes daily dosing (q24h) of daptomycin in patients with renal impairment to theoretically optimize the area under the curve (AUC) in each 24-hour interval. However, the safety and effectiveness of this approach are unknown.

Methods. This retrospective descriptive analysis evaluated outcomes of comparable daptomycin dosing schemes administered q24h vs. q48h in patients with renal impairment (estimated creatinine clearance < 30 mL/minute). Inpatient adults ≥18 years old were included if they had at least one creatinine phosphokinase (CPK) obtained during admission and received either a q24h or q48h renally-adjusted daptomycin dose from May 2014 through December 2018. High-dose daptomycin therapy was defined as >3 mg/kg q24h or >6 mg/kg q48h. The primary outcome was difference in CPK elevations in the q24h vs. q48h dosing groups. Secondary outcomes included clinical and microbiological response, mortality, and hospital length of stay.

Results. Thirty-seven patients met inclusion criteria [23 (62%) q24h vs. 14 (38%) q48h]. Median treatment duration was 5 (7 vs. 4) days. Twenty-two (59%) patients had enterococcal infections [17 (73%) q24h vs. 5 (35%) q48h]. Twenty-two (59%) patients received high-dose daptomycin therapy [18 (82%) vs. 4 (18%)]. Nine patients [7 (19%) vs. 2 (5%)] received a statin during daptomycin therapy. One (3%) patient developed a CPK elevation (statin and q24h group). No daptomycin dose was discontinued due to CPK elevation, or rhabdomyolysis. Median hospital length of stay was 10 days in both dosing groups. Clinical response [9 (64%) vs. 16 (69%)] and microbiological response [9 (64%) vs. 15 (65%)] were similar between the two dosing groups. However, 30-day mortality [5 (35%) vs. 4 (17%)] and 90-day mortality [6 (42%) vs. 5 (21%)] were higher in the q48h dosing group. The difference in effectiveness outcomes was greatest in the subset of patients with enterococcal infections (Table 1).

Conclusion. A daily daptomycin dosing strategy in patients with renal insufficiency was well tolerated and may be associated with improved effectiveness outcomes, particularly for enterococcal infections. Additional investigations of this approach are warranted.

Table 1: Effectiveness outcomes for patients with enterococcal infections receiving high-dose daptomycin		
	4-8 mg/kg q24h (n = 14)	7-10 mg/kg q48h (n = 3)
Clinical response – n (%)	9 (64)	0
Microbiological response – n (%)	8 (57)	0
30-day mortality – n (%)	3 (21)	2 (67)
90-day mortality – n (%)	4 (29)	3 (100)

Disclosures. All authors: No reported disclosures.

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202. The effectiveness of combination therapy of anti-methicillin-resistant Staphylococcus aureus agents and β-lactam agents in patients complicated with febrile neutropenia after bone marrow transplantation

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Background. Febrile neutropenia (FN) is one of the most frequent and serious complications of hematopoietic stem cell transplantation such as bone marrow transplantation (BMT). Anti-Pseudomonas agents should be initiated in all patients complicated with FN without delay, while anti–methicillin-resistant Staphylococcus aureus (MRSA) agents are exclusively recommended in the case of central venous (CV) line infection. Most BMT patients have the potential risk of catheter-related blood stream infection because of long-lasting catheterization including indwelling CV line. Therefore, the patients may also be received anti-MRSA agents empirically in addition to anti-Pseudomonas agents. So far, there are little reports that verify the effectiveness of the combination therapy under FN condition after BMT. The purpose of this study was to address the effectiveness.
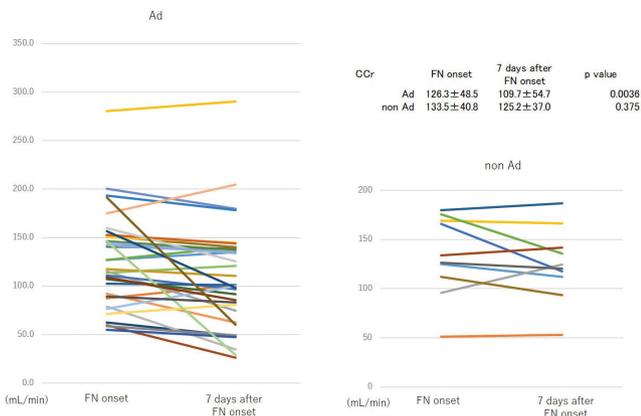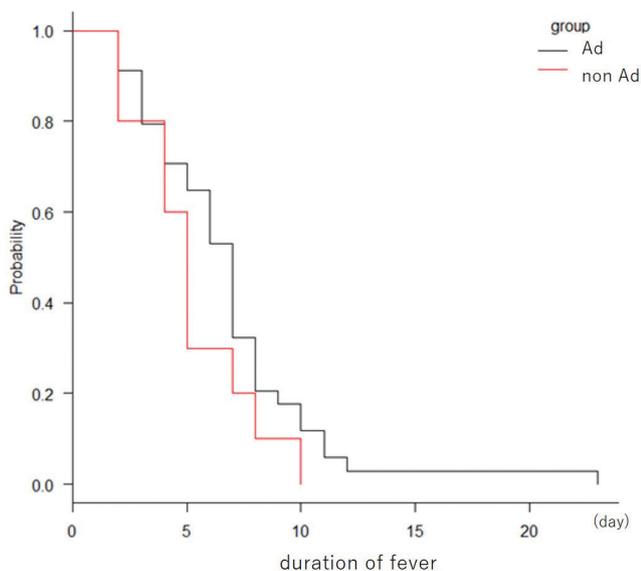
Methods. BMT was performed at Yokohama City University Medical Center between April 2012 and March 2018, and 44 patients who developed FN after BMT were enrolled. We analyzed patient information retrospectively. We used the duration of fever to evaluate the additive effect of anti-MRSA agents to β-lactam anti-Pseudomonas agents. We classified the patients during FN period into two groups whether anti-MRSA agents were administered (Ad group; 34 patients) or not (non-Ad group; 10 patients). Fever is defined as a single axillary temperature measurement of over 37.5 Celsius degrees. The study design and protocol were approved by the ethics committee at the Review Board of our hospital (ID：D1602011).

Results. Baseline characteristics were similar between the two groups. Blood cultures were performed onset of FN in all cases, in which five showed positive (11.4%). Bacteria requiring administration of anti-MRSA drugs were detected in the four cases. Nonetheless, duration of fever was not significantly shorten (6.8 ± 4.0 vs. 5.2 ± 2.5, $P = 0.171$) and there was no difference in the hospitalization period. The renal dysfunction was significantly higher in Ad group and the cost of anti-MRSA agents totaled about $ 36,000.

Conclusion. Our study indicates that no use of empirical combination therapy of anti-MRSA agents in addition to anti-Pseudomonas agents under FN condition after BMT, even if CV line is inserted.

		all (n=44)	Ad (n=34)	non Ad (n=10)	p value
Age		47.4±12.3	48.3±11.2	44.5±15.9	0.674
Gender, Male		31 (70.5)	24 (68.6)	7 (70.0)	1
PS					0.548
	0	41 (93.2)	32(94.1)	9 (90.0)	
	1	3 (6.8)	2 (5.9)	1 (10.0)	
Diagnosis					0.306
	Acute myeloid leukemia	14 (31.8)	12 (35.3)	2 (20.0)	
	Acute lymphoblastic leukemia	7 (15.9)	6 (17.6)	1 (10.0)	
	Non−Hodgkin lymphoma	1 (2.3)	1 (2.9)	0 (0)	
	Hodgkin lymphoma	1 (2.3)	0 (0)	1 (10.0)	
	Myelodysplastic syndromes	9 (20.5)	7 (20.6)	2 (20.0)	
	Aplastic anemia	3 (6.8)	1 (2.9)	2 (20.0)	
	その他	9 (20.5)	7 (20.6)	2 (20.0)	
Preparative regimen					0.0613
	Fludarabine+Melphalan+TBI	16 (36.4)	10 (29.4)	6 (60.0)	
	Fludarabine+Busulfan	4 (9.1)	3 (8.8)	1 (10.0)	
	Cyclophosphamide+TBI	18 (40.9)	17 (50.0)	1 (10.0)	
	Fludarabine+Cyclophosphamide	3 (6.8)	1 (2.9)	2 (20.0)	
	other	3 (6.8)	3 (8.8)	0 (0)	
MASCC					1
	<21	2 (4.5)	2 (5.9)	0 (0)	
	>21	42 (95.5)	32 (94.1)	10 (100)	
Preventive antibacterial agent					0.698
	Levofloxacin	19 (43.2)	34 (100)	10 (100)	
	Tazobactam / piperacillin	3 (6.8)	2 (5.9)	1 (10.0)	
	Cefepime	19 (43.2)	12 (35.3)	2 (20.0)	
	Meropenem	2 (4.5)	17 (50.0)	6 (60.0)	
	Doripenem	1 (2.3)	5 (14.7)	2 (20.0)	
Preventive antiviral agent					
	Aciclovir	44 (100)	15 (44.1)	4 (40.0)	
Preventive antifungal agent					1
	Itraconazole	14 (31.8)	14 (41.2)	5 (50.0)	
	Fluconazole	23 (52.3)	2 (5.9)	0 (0)	
	Micafungin	7 (15.9)	1 (2.9)	0 (0)	
CVC		44 (100)	34 (100)	10 (100)	

	all (n=44)	Ad (n=34)	non Ad (n=10)	p value
Number of days from transplant to FN onset	8.3±3.3	7.6±3.1	10.0±3.4	0.0728
Clinical laboratory test value at onset of FN				
body temparture	38.2±0.6	38.3±0.7	37.9±0.5	0.245
WBC	121.1±66.3	112.9±61.9	148.8±76.7	0.116
Hb	10.0±9.4	10.6±10.6	8.0±1.1	0.157
Plt	1.9±1.4	2.1±1.5	1.3±0.7	0.101
Neu	75.4±75.0	59.9±41.2	81.6±46.6	0.157
AST	15.7±8.0	16.0±7.0	14.6±11.1	0.261
ALT	24.1±29.9	24.1±32.5	24.2±20.3	0.44
sCr	0.66±0.23	0.67±0.25	0.62±0.16	0.823
CCr	127.9±46.6	126.3±48.5	133.5±40.8	0.499
Alb	3.5±0.4	3.4±0.36	3.7±0.4	0.212
T-Bil	0.7±0.4	0.6±0.3	0.8±0.5	0.543
Duration of neutropenia				
ANC<100	10.4±7.0	10.9±7.3	8.5±5.6	0.462
ANC<500	17.0±8.0	17.1±8.5	16.4±6.2	0.899
ANC<1000	22.5±10.4	22.3±10.1	23.0±12.0	0.933
Antimicrobial agent switched at the onset of FN				0.644
Cefepime	6 (13.6)	5 (14.7)	1 (10.0)	
Meropenem	23 (52.3)	18 (52.9)	5 (50.0)	
Doripenem	4 (9.1)	4 (11.8)	0 (0)	
No switching	11 (25.0)	7 (20.6)	4 (40.0)	
duration	14.9±7.8	14.9±8.0	15.0±7.7	0.966
Number of days with a CVC in place prior to FN	19.9±3.9	19.3±4.0	22.1±3.1	0.0338
Anti MRSA agent				
Vancomycin	25 (73.6)	25 (73.6)	–	
Teicoplanin	6 (17.6)	6 (17.6)	–	
Daptomycin	3 (8.8)	3 (8.8)	–	
Duration of anti-MRSA agent	11.8±6.3	11.8±6.3	–	
Initial trough value				
Vancomycin	12.75±3.92	12.75±3.92	–	
Teicoplanin	22.03±8.44	22.03±8.44	–	
Duration of fever	6.4±3.7	6.8±4.0	5.2±2.5	0.225
90-day mortality rate after onset of FN	2 (4.5)	1 (2.9)	1 (10.0)	0.407
Hospitalization	103.8±69.6	111.8±76.6	76.8±23.9	0.188

	CCr	FN onset	7 days after FN onset	p value
	Ad	126.3±48.5	109.7±54.7	0.0036
	non Ad	133.5±40.8	125.2±37.0	0.375

203. Correlating Cardiac PET Results with Intra-Operative Findings in Infectious Endocarditis

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Background. Care for patients with infectious endocarditis is complicated by delays in diagnosis and relatively low sensitivity of existing diagnostic algorithms, particularly the Duke Criteria. In recent years, cardiac positron emission tomography (PET) has been identified as a useful tool in detecting occult endocardial infections. Multiple prospective studies have demonstrated that when incorporated with conventional imaging modalities cardiac PET can improve the sensitivity of the Duke Criteria by 27–38 percent. These studies used as their gold standard for diagnosis the consensus opinion of an endocarditis team and were characterized by a relatively low percentage of patients who underwent surgery. We reviewed 4 years of surgically managed IE cases at a tertiary care center where cardiac PET was used to aid diagnosis.

Methods. Between July 1, 2014 and December 31, 2018 we retrospectively reviewed 68 surgically managed cases of endocarditis. Cases were identified using ICD-9 and ICD-10 codes of patients who underwent surgical valve replacement for endocarditis as well as all patients who had cardiac PET scans to rule out endocarditis. Variables including PET results, operative findings, valve culture, pathology and PCR testing were recorded.

Results. 14 patients were identified who underwent cardiac PET prior to their surgical intervention. 9 cases were classified as possible endocarditis by Duke Criteria and 10 involved prosthetic valves. 12/14 scans were interpreted as suggestive of or consistent with endocarditis. Twelve positive PETs were associated with either operative findings of infection and/or positive PCR testing on the excised valve (positive predictive value: 100%). The 2 patients with negative scans were found to have noninfectious vegetations intra-operatively, negative valve cultures and negative pathology.

Conclusion. Cardiac PET correlates closely with intra-operative findings in patients with endocarditis. In patients with suspected endocarditis it may help guide surgical decision making. Cardiac PET should be considered for addition to the Modified Duke's Criteria similar to the European Society of Cardiology guidelines.

Table 1. Pre-operative and intra-operative findings in 14 surgically managed endocarditis cases.

Organisms	Duke Criteria	PET Results	OR Findings	Endocardial Manifestations	OR Culture	Pathology	Valve PCR
MSSA	Definite	Positive	Infection	Abscess / Vegetations	GPCs	Not performed	N/A
MSSA/MRSA	Possible	Positive	Infection	Abscess	No growth	Dystrophic calcification	N/A
Staphylococcus epidermidis	Definite	Positive	Infection	Purulent Vegetations	No growth	Not performed	*Staphylococcus epidermidis*
Staphylococcus lugdunensis/ *Citrobacter* spp.	Possible	Positive	Infection	Abscess	Coag negative staph	Endocarditis	*Enterobacteriaceae* spp.
Streptococcus mitis	Definite	Positive	Infection	Abscess / Vegetations	Strep Mitis	Not performed	N/A
Streptococcus mutans	Definite	Positive	Infection	Abscess / Vegetation	No growth	Not performed	*Streptococcus mutans*
Streptococcus bovis	Definite	Positive	Infection	Purulent Vegetation	No growth	Not performed	N/A
Streptococcus agalactiae	Possible	Positive	Indeterminate	Leaflet Destruction	No growth	Endocarditis	N/A
Corynebacterium spp.	Possible	Positive	Infection	Purulent Vegetations	No growth	Endocarditis	N/A
Aggregatibacter spp.	Possible	Positive	Infection	Abscess	No growth	Dystrophic calcification	N/A
Culture Negative	Possible	Positive	Infection	Leaflet Destruction	No growth	Dystrophic calcification	*Granulicatella* spp.
Culture Negative	Possible	Positive	Non-infectious	Fractured Leaflet	Not performed	Not performed	*Bartonella* spp.
Culture Negative	Possible	Negative	Non-infectious	Fractured Leaflet	Not performed	Not performed	N/A
Culture Negative	Possible	Negative	Non-infectious	Thrombus	No growth	Not performed	N/A

Table 2. Sensitivity and Positive Predictive Value of various diagnostic modalities for infectious endocarditis.

	Duke Criteria	TTE	TEE	Cardiac PET	Valve Culture
Sensitivity (%)	42%	33%	50%	100%	25%
Positive Predictive Value	100%	80%	83%	100%	N/A

204. Antagonistic Effect of Colistin on Vancomycin Activity Against Methicillin-Resistant Staphylococcus aureus in in vitro and in vivo Studies

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