The use of Daptomycin in the treatment of bacteraemia, bone & soft tissue infections in a tertiary paediatric centre, a case series

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Introduction

- Daptomycin, a lipopeptide antibiotic, has excellent activity against resistant and sensitive staphylococci and streptococci. It penetrates inflamed tissue, synovial fluid, and bone well
- As a once daily antibiotic, it can facilitate outpatient parenteral therapy (OPAT), enable hospital discharge and save bed days
- These features makes it an attractive option for treatment of ostioarticular infection (OAI) but data on its use in the paediatric setting is limited
- We report our experience with daptomycin use in a tertiary paediatric centre

Methods

- Retrospective data review of children and adolescents in OLCHC in whom daptomycin was initiated by the ID service from November 2016 to December 2017 (inc.)
- Patients were identified through review of departmental records
- Daptomycin success defined as completion intended course resulting in stop or transition to oral therapy

Results

- 12 daptomycin (6mg/Kg/day) recipients, 7 male, median age 15 (range 8-17) yrs, median weight 47 (range 23.5 – 90) kg were identified
- 4/12 patients had polymicrobial infection with daptomycin part of combination regimen

Reasons* for Daptomycin Use

Organisms* Targeted

Patient Cohort

	Age (yrs)	Wt. (Kg)	Diagnosis	Target Organisms	Abx duration (days)		Adverse Events on Dapto	Outcome
					Pre Dapto.	Dapto.		
1	15	47	Spinal Rod Infection (1)	MSSA S. dysgalactiae	26	8	N	Success
2	11	23	Spinal Rod Infection (1)	MRSA	7	62	N	Success
3	9	17	Spinal Rod Infection (2)	E. faecalis CoNS	>23	16	N	Failure
4	17	48	Spinal Rod Infection (1)	E. faecalis	7	21	Diarrhoea, Dehydration, AKI	Stopped Dapto
5	17	50	Hip implant infection (1) & Infected decubitus	S. epi MSSA/VRE	54	55	N	Success
6	9	28	Septic arthritis /OM ankle	MSSA	21	9	N	Success
7	15	50	Septic arthritis post hip surgery	MSSE	11	8	N	Success
8	15	90	Osteomyelitis femur	MSSA	14	38	N	Success
9	8	24	Osteomyelitis Calcaneous	MRSA	5	44	N	Success
10	15	78	Spinal Rod infection (1)	MSSA	4	26	N	Success
11	12	47	Metastatic Osteosarcoma + wound infection	MSSA, CoNS E. faecalis	> 7days	32	N	Success
12	15	60	Bacteraemia	MSSA	7	6	N	Success

1: Hardware retained, 2: Hardware removed,

Course

- Daptomycin therapy was generally very well tolerated
- 10/12 completed the intended duration, facilitating discharge to OPAT, and transition to PO regimen where appropriate
- 2/12 discontinued tx: 1 treatment failure, 1 Acute Kidney Injury in child with severe CP, complex medical issues, feeding intolerance and diarrhoea
- CK levels were WNL for 10/12 at baseline and 9/12 tested during and post therapy

Conclusion

Daptomycin, well tolerated, is a potentially very useful agent in paediatrics and can be used to facilitate early hospital discharge when patient require continuing parenteral therapy