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Objectives: Infective endocarditis (IE) caused by Gram-positive bacteria, primarily methicillin-resistant *Staphylococcus aureus* (MRSA) is associated with a high rate of morbidity and mortality. Daptomycin, with proven efficacy in the treatment of Gram-positive infections, is indicated for treatment of right-sided endocarditis due to *S. aureus*. This retrospective, non-interventional, multicentre patient registry evaluated the safety and efficacy of daptomycin therapy in patients with IE.

Methods: Data from EU-CORE registry were collected between 2007 and 2012; patients with IE were followed up until 2014. Patients who received at least one dose of daptomycin for treatment of IE were enrolled across 18 countries. Clinical outcomes were assessed as success (cured plus improved), failure or non-evaluable. Adverse events (AEs) were recorded during daptomycin treatment and for up to 30 days post-treatment.

Results: Out of 6075 patients included in the EU-CORE registry, 610 were diagnosed with IE as primary infection; 414 (68%) patients had left-sided IE (LIE), 149 (24%) had right-sided IE (RIE) and 47 (8%) had both left- and right-sided IE (LRIE). The most common primary pathogen was *S. aureus* (LIE 37%; RIE 48%; LRIE 38%). The median duration of daptomycin therapy was 21 days for LIE (range 1–132 days), 23 days for RIE (range 1–110 days) and 15 days for LRIE (range 5–118 days). Surgical replacement of heart valve was common (166 in LIE, 21 in RIE and 11 in LRIE patients). Overall clinical success was achieved in 80% of patients (LIE 77%, RIE 89% and LRIE 83%). Success rates were numerically higher with daptomycin doses ≥ 8 mg/kg (table). Patients with *S. aureus* infections had success rates of 78% (72% for MRSA), 87% (91% for MRSA) and 91% (67% for MRSA) for LIE, RIE and LRIE, respectively. Overall clinical success in patients followed for up to 2 years was 87% (LIE 88%, RIE 94% and LRIE 89%). AEs deemed possibly related to daptomycin in the investigator's opinion were reported in 18 (4%) LIE, 2 (1%) RIE and 1 (2%) LRIE patients, respectively. There were 11 (2%) patients (8 with LIE, 2 with RIE and 1 with LRIE) with creatine phosphokinase elevation reported as possibly related to daptomycin.

Conclusion: Data from this real world clinical setting showed that daptomycin was well tolerated and effective for treatment of LIE, RIE and LRIE caused by Gram-positive bacteria including MRSA, with numerically higher success rates for daptomycin doses ≥ 8 mg/kg. Two-year follow-up data showed that a high proportion of patients achieved relapse-free treatment outcome.

Table. Clinical success rates by heart side and daptomycin dose		
Clinical success rates, % (n/N)		
Dose	<8 mg/kg	≥ 8 mg/kg
Primary infection (heart side)		
LIE	74 (241/325)	92 (68/74)
RIE	88 (100/113)	94 (32/34)
LRIE	85 (28/33)	100 (8/8)