

KLIC-SCORE:

A RELIABLE TOOL TO PREDICT OUTCOME IN EARLY PJI TREATED WITH DAIR?

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BACKGROUND: Debridement, antibiotics and implant retention (DAIR) is the first line treatment modality for early prosthetic joint infection (PJI), although in retrospective series different protocols have been proposed with a variable success rate (18-100%) (1). To predict outcome of PJI treated with DAIR the KLIC score has been formulated as a risk stratification tool (2).

OBJECTIVES: Our aim was to determine the accuracy of this scoring system at an independent tertiary Orthopedic centre in a typical DAIR population.

METHODS: 24 cases of PJI were retrospectively reviewed, consecutively treated from November 2009 to June 2019 at Santa Maria Maddalena Institute (Rovigo, Italy). Strict inclusion criteria were considered: acute onset of symptoms (within 3 weeks from the primary implant), fever for less than 3 weeks, absence of immune system impairment (diabetes, rheumatologic diseases, steroid therapies), well fixed prosthetic components, absence of sinus tract. When an infection was suspected, debridement and collection of samples for microbiological, histopathological and physico-chemical with leukocyte count analyses were performed. Each patient was evaluated by a multidisciplinary team and treated with an appropriate antibiotic treatment for at least 8-10 weeks. The end point for early failure was defined as: 1) the need for unscheduled surgery, 2) death-related infection within the first 60 days after debridement or 3) the need for suppressive antibiotic treatment.

ISOLATED STRAIN	N. of cases	KLIC-score range	OUTCOME
<i>Coagulase negative Staphylococci</i>	9	5.5-7	Positive
<i>Staphylococcus aureus (MSSA)</i>	5	5.5-7	Positive
<i>Staphylococcus aureus (MRSA)</i>	3	4-5	Negative
<i>Escherichia coli</i>	2	5.5-7	Positive
<i>Enterococcus faecalis</i>	2	5.5-7	Positive
Culture negative	3	5.5-7	Positive

Table 1: Frequency of bacterial strain isolated, klic-score range and outcome of the reported cases .

RESULTS: All the enrolled patients had a KLIC-score between 4-5 and 5.5-7 (55% and 71% of expected failure, respectively). None of the patient reported a KLIC-score >7. DAIR treatment was successful in 21 patients (87,5%). The most frequently isolated organisms were coagulase-negative staphylococci (9 cases) followed by methicillin-sensible *Staphylococcus aureus* (5 cases) and methicillin-resistant *Staphylococcus aureus* (MRSA) (3 cases). The 3 patients (12,5%) who developed an early failure had the lowest KLIC-score and a PJI caused by MRSA.



Figure 1: DAIR protocol arthroscopically performed

CONCLUSION: In our case series, the KLIC-score applied retrospectively was not able to predict patients with the highest risk of early failure. As already suggested by other authors, evidence of MRSA infection is a contraindication for performing DAIR. Further studies are needed to validate a successful prognostic score for DAIR procedure that consider bacterial-related variables also, such us type of isolated strains and antimicrobial resistance profiles when available.