Assessment of MSIS Diagnostic Criteria as Predictors of Treatment Success in Total Knee Arthroplasty (TKA) Infections Treated with Two-Stage Exchange

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Abstract

Background: Prosthetic joint infection (PJI) is a grave complication of total joint arthroplasties. MSIS diagnostic criteria (MSIS 2011) are used in the diagnosis of PJI. In total knee arthroplasty, the presence of purulence in the joint fluid and elevated synovial leukocyte count is the diagnostic criterion. However, joints treated with two-stage exchange (DAIR) may not have purulence. The aim of this study was to evaluate the utility of MSIS criteria as predictors of treatment success in total knee arthroplasty (TKA) infected with PJI treated with two-stage exchange.

Objectives

To systematically study MSIS criteria as markers for patients with infected hip and knee arthroplasty treated with debridement, antibiotics, and implant retention (DAIR).

Methods

Retrospective cohort study

Data sources: Hospital for Special Surgery (HSS) Infection Database

Inclusion: All arthroplasty infections between 2009-2014

Inclusion: TKA PJI treated with two-stage and 2-yr follow-up

Exclusion: Patients with infection associated with non-periprosthetic source

Exclusion: Patients with infection less than 2 years of symptoms

Exclusion: Patients with previous history of joint infection

Exclusion: Patients treated with other than DAIR

Exclusion: Patients with history of malignancy

Results

• 159 patients met MSIS criteria for TKA PJI and underwent 2-stage exchange

• 116 patients (73%) remained infection-free after 2 years of observation

• Major MSIS Criteria had no statistically significant association

• Presence of sinus drainage (p=0.593)

• >1 positive cultures (p=0.979)

• Minor Criteria had no statistically significant association.

Conclusion

Individual MSIS diagnostic criteria (which do have prognostic utility in knee PJI treated with DAIR) are not powerful predictors of outcome of knee PJI after two-stage exchange.

References