The following were recorded for each year 1946-2018: total number of arthritis, and diagnostic markers derived from synovial fluid/aspirate. The database, Scopus, was searched for English-language studies; prosthetic joints only; native joints only. Values were plotted, with polynomial trend-lines and R² calculated.

Results: Our search yielded 2279 relevant studies in total (561 on prosthetic joints), published 1946-2018. Only 1 study was identified for the year 1946; the next recorded publication was in 1960. Therefore, this single study was excluded as an outlier. Results are presented in Figure 1. The number of studies on diagnostic biomarkers for acute hot joints continued to increase after 1960. From 2016, the number of studies conducted in prosthetic joints outnumbered those done in native joints. Polynomial trend-lines applied to the results showed studies on native acute hot joints are predicted to decline, while those in prosthetic joints will continue to increase.

Conclusion: Reasons for an increasing number of studies on prosthetic compared to native acute hot joints include a narrower differential diagnosis in prosthetic joints, i.e. septic vs aseptic. In contrast, native acute hot joints may be the result of various causes including crystal arthritis, inflammatory arthritis, and trauma. Having a narrower differential diagnosis may facilitate diagnostic research in prosthetic joint presentations. Furthermore, incidence of prosthetic joint infection is also greater than that of native joint infection [2]. Nonetheless, the incidence of native joint infection is increasing [3]. This, and the lack of methods by which to rapidly distinguish native joint septic arthritis from non-infective causes, indicates that more research is required in this area.

References:
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