

MetroHealth Medical Center
RESEARCH DAY 2023
Abstract Submission Form

Poster Title: Risk of Septic Arthritis after Corticosteroid Joint Injections – A Retrospective Propensity Score-Matched Cohort Analysis

Authors: Claire Cooper DO, Richard Wilson MD MS

Presenter's Name: Claire Cooper DO

Location of Laboratory: MetroHealth Old Brooklyn Campus

Category: Clinical Research

The IRB determined that the proposed activity is not research involving human subjects as defined by DHHS and FDA regulations. IRB ID: STUDY00000192

Background and Objectives:

Septic arthritis (SA) is a rare but serious complication of corticosteroid joint injections (CSI) which can lead to joint damage and possible mortality. There is limited research defining the true risk of SA following large joint CSI. Literature review of SA after CSI suggests rates anywhere from 0.08% to 0.002%. This analysis seeks to determine the absolute and relative risks of SA after large joint CSI across 48 health care organizations.

Design, Setting, Participants and Main Outcome Measures:

A retrospective cohort study of electronic health records identified patients from a multicenter and nationwide database in the US who had an ambulatory visit with a diagnosis of arthritis followed by a second ambulatory visit within three months. Patients with gonococcal infection, recent orthopedic surgery or procedures, or prior diagnosis of SA were excluded. Patients were categorized based on presence or absence of large joint corticosteroid injection (CSI) during the second ambulatory visit. Patients were propensity-score matched (1:1) based on risk factors such as demographics, comorbidities, or non-health related risk factors. The risk of SA was compared between matched cohorts with 95% confidence intervals. The primary outcome was SA diagnosis between 1 and 21 days after the second visit.

Results and Conclusions:

The search identified 231,561 patients in the injection group. Propensity score matching was then performed with a pool of 1,907,703 potential control patients for a final matched sample of 231,544 in each group. The risk of SA after major joint CSI is 0.168% whereas the risk without major joint CSI is 0.098% of SA in the control group. The absolute risk difference for CSI compared to no CSI was -0.07% (95% CI -0.049% - -0.091%; $p < 0.0001$). This suggests that current standard practices related to major joint CSI do not increase the risk of SA.