

Increased risk of rheumatoid arthritis among patients with chronic osteomyelitis: a nationwide, population-based, cohort study

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Abstract

Objective: To explore if there is a risk association between chronic osteomyelitis and the development of rheumatoid arthritis (RA).

Methods: From the Taiwan National Health Insurance Research Database, we identified 19374 hospitalized patients with newly diagnosed chronic osteomyelitis during 2000-2009, who were excluded with RA history before the initial diagnosis date (index date). We randomly selected 77496 sex-, age- and index date-matched patients without osteomyelitis history as the control group. Cox proportional hazard regressions were performed to estimate the association between chronic osteomyelitis and RA with adjustment of gender, age and comorbidities.

Results: The mean age of the selected 19374 hospitalized patients with newly diagnosed chronic osteomyelitis was 55.8 years [standard deviation (SD) = 19.3]. The incidence of RA was twofold higher in the chronic osteomyelitis group compared with the non-osteomyelitis group (4.71 vs. 2.05 per 10000 person-years), with an adjusted hazard ratio (aHR) of 2.27 [95% confidence interval (CI) = 1.58-3.26]. The younger (< 45 years old) patients with chronic osteomyelitis had higher risk to develop RA with an aHR of 4.60 (95% CI 1.95-10.8). The risk of RA development increased when hospitalization twice or over twice per two follow-up years due to osteomyelitis with an aHR of 5.96 (95% CI 3.05-11.6) and 31.1 (95% CI 18.2-53.1), respectively.

Conclusion: This study demonstrated a significant association between chronic osteomyelitis and RA development. The younger patients with chronic osteomyelitis had higher risk of developing RA. This risk increased with the frequency of hospitalization due to osteomyelitis. Further studies are needed in the future.