High rates of tuberculin skin test positivity due to methotrexate therapy: False positive results?

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Rationale: The tuberculin skin test (TST) and interferon ? release assays (IGRAs) are commonly used for latent tuberculosis infection (LTBI) screening. Unexpectedly high TST positivity rates have been reported in patients with rheumatic diseases, and methotrexate is frequently used in this population. We hypothesized that methotrexate use could be associated with false-positive TST results. Objectives: To investigate whether treatment with methotrexate and other factors are associated with false-positive TST results in patients with rheumatic diseases. Methods: Prospective single-center study conducted between April 2013 and March 2016. Adult patients with rheumatic diseases were evaluated with a TST and two IGRAs for LTBI screening. We compared TST and

IGRA results in patients treated and not treated with methotrexate and analyzed for factors associated with positive TST results. Conclusions: Our data suggest false-positive TST results associated with methotrexate therapy. Thus, we recommend against using the TST for LTBI screening in patients receiving methotrexate and the preferential use of IGRAs in such patients. Measurements and Main Results: We studied 393 patients with rheumatic diseases, including ankylosing spondylitis (ASP, n = 90), rheumatoid arthritis (RA; n = 120), psoriatic arthritis (PA, n = 126), and other disorders (n = 57). The rate of TST positivity varied across the groups: ASP 22.2%, RA 25%, PA 35.7%, and other disorders (22.8%). Positivity rates were lower with IGRAs. Methotrexate use was associated with a statistically significant two-fold increase in the risk of a positive TST and a dose\x96 response relationship was observed. We found no statistically significant associations between methotrexate use and IGRA test positivity.

interferon ? release assays

latent tuberculosis infection

methotrexate

rheumatic disease

Tuberculin Skin Test

biological product

corticosteroid derivative

disease modifying antirheumatic drug

leflunomide

methotrexate

methotrexate

adult

aged

ankylosing spondylitis

Article

cohort analysis

controlled study

dose response

false positive result

female

human

interferon gamma release assay

intermethod comparison

latent tuberculosis

major clinical study

male

priority journal

prospective study

psoriatic arthritis

rheumatic disease

rheumatoid arthritis

risk assessment

screening test

tuberculin test

false positive result

latent tuberculosis

middle aged

tuberculin test

Adult

False Positive Reactions

Female

Humans

Latent Tuberculosis

Male

Methotrexate

Middle Aged

Prospective Studies

Rheumatic Diseases

Tuberculin Test