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Glucocorticoid use and cervical spine deformity in patients with Rheumatoid Arthritis

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Background: Patients with rheumatoid arthritis (RA) are often prescribed glucocorticoids. However, it is known that long-term use of glucocorticoids increases the risk of osteoporosis and fractures. The influence of corticosteroid use on the prevalence of cervical spine deformity in RA patients is yet to be determined.

Research question: To evaluate the influence of glucocorticoid use on the prevalence of cervical spine deformity in patients with RA.

Methods: Duration and dose of glucocorticoid use during 10 years were evaluated for patients with new onset RA (BeSt Trial). Missing values were imputed using last observation carried forward. Lateral X-rays at 5 and 10 years FU were assessed for Atlantoaxial Subluxation (AAS) and Subaxial Subluxation (SAS). Odds Ratios (OR) were corrected for age at baseline, gender, ACPA-positivity and RF-positivity.

Results: 272 patients were included and mild cervical deformity (AAS and/or SAS >2 mm) was observed in 108 patients (40%). 147 patients (54%) used glucocorticoids during 10 years FU, with a median duration of 15 months (IQR 3-11 months). For a one year increase in total duration of prednisone-use, the corrected OR for mild cervical spine deformity was 1.20 (95% CI: 1.03-1.38; p=0.02), and for an increase in total cumulative dose of 1 gram of prednisone, OR for mild cervical spine deformity was 1.06 (95% CI: 1.01-1.12; p=0.02).

Discussion: Longer duration of use of glucocorticoids in RA patients significantly increases odds of mild cervical spine deformity after 10 years. So, while glucocorticoids are known to have a beneficial effect on overall disease activity, caution should be used in prescribing glucocorticoids for long time periods.