Correspondence on 'Concomitant use of oral glucocorticoids and proton pump inhibitors and risk of osteoporotic fractures among patients with rheumatoid arthritis: a population-based cohort study'

We read with deep interest the article by Abtahi *et al*[1]; their study was aimed at investigating the concomitant use of oral glucocorticoids (GCs) and proton pump inhibitors (PPIs) and risk of osteoporotic fractures among patients with rheumatoid arthritis (RA). The authors concluded that there was an interaction between the risk of osteoporotic fractures and concomitant use of oral GCs and PPIs.

However, we noticed that among the disease severity indicators of RA described in the manuscript, the authors did not use any of the following disease activity measures: disease activity score in 28 joints with the erythrocyte sedimentation rate or C reactive protein level, clinical disease activity index, simplified disease activity index, routine assessment of patient index data 3 and patient activity scale-II, as recommended by the American College of Rheumatology.[2] Nonetheless, the authors used the drugs as disease severity indicators, and of course, the analgesic drugs reflect the RA disease severity; however, the total percentages of drugs in the groups of concomitant users of oral GCs and PPIs, users of oral GCs alone, and users of PPIs alone were higher than that in the group of non-users. In particular, the percentage of the powerful analgesics tramadol and opioids was the lowest in the group of non-users, and the data implied that the patients' disease severity was more serious in the groups of concomitant users of oral GCs and PPIs, users of oral GCs alone, and users of PPIs alone than that in the group of non-users. However, it has been confirmed that patients with RA have an increased risk of osteoporotic fractures,[3] and the RA disease duration and activity contribute to the risk of systemic osteoporosis and fracture.[4 5] Therefore, regarding the data of disease severity indicators of RA reported in the manuscript, patients in the group of concomitant users of oral GCs and PPIs might have had the highest risk of osteoporosis and fractures according to the baseline characteristics of the study population, such that the baseline characteristics might have had an effect on the final results.

Furthermore, according to the European Alliance of Associations for Rheumatology recommendations for the management of RA,[6] short-term GCs should be considered when initiating or changing conventional synthetic disease-modifying antirheumatic drugs when they exhibit their efficacy, and tapering GCs rapidly (aiming at discontinuation within approximately 3 months) is important. However, in this study, the average durations of drug use were 3.3 years for concomitant and single GC users and 4.1 years for single PPI users. Were the patients subjected to any GC drug dose changes? How were the patients divided into the low or high GC dose groups? As the average duration of GC drug use was 3.3 years, it might have reflected that the RA disease activity was in progression; therefore, it was difficult to distinguish between the RA disease activity and GC drug, which is the major reason for osteoporosis and fractures.

Taken together, the risk of osteoporotic fractures caused by the concomitant use of oral GCs and PPIs might be increased by the RA disease activity according to the baseline characteristics of the study population.

We respect the significant contributions of the authors and look forward to the follow-up results of this study.

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