Response to 'Does inflammation predict radiographic progression in hand osteoarthritis?' by Li *et al*

Dear Editor,

We highly appreciate the interest Li and Liu¹ show in our paper in their eLetter.

The concern of Drs Li and Liu is the low number of patients with inflammation in our cohort, and they suggest carefulness when interpreting the results. Unfortunately, Li and Liu have misunderstood the results when stating that "synovitis and power Doppler were found only in 16.6% and 2.5% of the 78 included participants respectively". These numbers are found in table 1 and refer to the number of affected *joints*, not *patients*.² The high prevalence of synovitis at patient level is reported in the Results section, second paragraph: 'At baseline, 73 (93.6%) and 33 (42.3%) patients had grey scale synovitis and power Doppler present in one or more joints, respectively'. The analyses were performed at joint level, not at patient level, by generalised estimating equation, which account for intraperson dependency. We agree with Drs Li and Liu that analyses that explore risk factors for osteoarthritis (OA) progression are prone to null results, as elegantly described by Zhang *et al*.³ However, based on the fact that statistically significant associations between synovitis and radiographic progression were demonstrated in the current paper, this issue is not relevant. Our results are also in line with previous studies^{4 5} which strengthen the validity of the current results. Taken together, we found evidence that inflammation is highly prevalent in patients with hand OA and represent a risk factor for disease progression.

Few studies have explored whether anti-inflammatory treatment affect future radiographic progression. Verbruggen *et al*⁶ demonstrated less erosive development in swollen joints in persons on antitumour necrosis factor therapy as compared with placebo. However, future studies are needed to confirm these findings. In the Oslo hand OA cohort, patients were not treated with synthetic or biological disease-modifying antirheumatic drugs. Some patients reported the use of non-steroidal anti-inflammatory drugs (39.7%) and prednisolone (5.1%), but analyses including these medications did not change our results, as expected, as they most likely do not affect the risk of progression.

The authors also address the limitation of synovitis only being reported at baseline, and we agree that longitudinal data on inflammation is of interest. However, the association between changes of synovitis and radiographic progression will answer a different hypothesis than the predictive value of baseline observations. In this context, we recommend a recent 2-year study by Kortekaas *et al*⁵ on patients with hand OA who reported a stronger association between persistent inflammatory features (ie, synovial thickening, effusion and power Doppler signals at baseline and 2-year follow-up) and radiographic progression

than fluctuating inflammatory features when compared with hand OA joints with no inflammation.

Finally, the authors question the adjustment of follow-up time. The degree of radiographic progression, which was our outcome in the analyses, depends on the follow-up time, which we wanted to adjust for in our analyses. Analyses without adjustment for the period of follow-up time gave us more or less the same results.

We appreciate the interest in our paper and hope that we have adequately answered the concerns that were raised by Drs Li and Liu.

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