LETTER TO THE EDITOR

Arterial stiffness and ankle brachial index in patients with rheumatoid arthritis and inflammatory bowel disease

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To the Editor;

We read the article “Comparison of inflammation, arterial stiffness and traditional cardiovascular risk factors between rheumatoid arthritis and inflammatory bowel disease” by Fan et al. [1] with great interest. In this very-well designed study, authors found that pulse wave velocity (PWV) levels were similar between rheumatoid arthritis (RA), inflammatory bowel disease (IBD) and control groups. In addition, they also showed that ankle brachial index (ABI) levels were higher in controls than IBD, but not RA. They concluded that traditional risk factors, but not inflammatory markers, are major parameters associated with arterial stiffness. These findings provide new information about the association between inflammatory diseases and atherosclerosis.

In this study, although RA patients have higher Framingham risk score and number of hypertensive patients, there was no significant difference between RA and control groups in PWV and ABI levels. Arterial stiffness has been known as an independent predictor cardiovascular mortality and is increased in rheumatologic diseases despite a low risk for cardiovascular disease according to Framingham score [2]. Moreover, in IBD patients, ABI levels were significantly decreased when compared to control subjects, but PWV levels were not correlated with ABI. Whereas a negative correlation between PWV and ABI was demonstrated in individuals without organic heart disease [3].

We suggest some possible explanations for the lack of increased PWV and decreased ABI in patients with RA and IBD than controls. In present study, authors did not examine renal function tests and hemoglobin levels. We know that patients with chronic renal failure and anemia have increased risk for cardiovascular events and peripheral artery disease [4, 5]. Moreover, they did not examine the association of disease extent and duration with vascular parameters. We think that as disease extent and duration increased, risk of atherosclerosis will be increased due to long-term exposure to inflammation.

Before making certain comments on these findings, we think that this study should be reconsidered in light of the above mentioned suggestions. This could provide the readers of the journal clearer information regarding the effects of inflammatory diseases in atherosclerosis.

Authors’ Response:

Dear Editors of Journal of Inflammation,

We are writing in response to the letter concerning our manuscript. We appreciate the interest in our work. As noted, we did not observe a significant increase in mean baPWV in RA patients [1]. Whilst RA has been associated with an increased prevalence of arterial stiffness, there are other other studies that also failed to find an increase in PWV [6, 7] in these patients. Another study reported that only about 30% of RA patients had increased arterial stiffness [8]. In IBD, PWV has been found to be increased [9] or unchanged [10]. Thus, findings on arterial stiffness in RA and IBD patients have varied between studies, possibly due to the difference in demographics of patients studied.

In our study, most patients were well controlled by treatment with disease modifying drugs. It is known that disease modifying drugs improve endothelial dysfunction and reduce arterial stiffness [11–13]. Disease duration and activity are also likely to influence arterial stiffness [8, 14]. We thus examined the correlations between disease duration and vascular parameters. We did not examine correlations with disease activity since most patients were in remission. PWV was correlated with disease duration in patients with IBD (r = 0.343, p = 0.026) but not with RA. Other investigators also did not find correlations between PWV and disease duration or activity [15]. This study also reported that among the many factors related to arterial stiffness, only old age...
and high systolic blood pressure were major determinants, which is consistent with our findings. ABI was not correlated with vascular parameters in either RA or IBD. Although negative correlation between PWV and ABI have been demonstrated in individuals without organic heart disease [3], we did not observe such inverse correlation in our study.

Finally, we appreciate and agree with the comment that patients with chronic renal failure and anaemia have increased risk for cardiovascular events and peripheral artery disease [4, 5]. As suggested we have examined data on renal function (urea, creatinine) and haemoglobin, which are all within the normal range (Table 1).

### Competing interests

The authors declare they have no competing interests.

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