Response to: 'Off-label use of tofacitinib: a potential treatment option for SAPHO syndrome' by Xie *et al*

We would like to thank Xie *et al*[1] for their interest in our paper[2] and for their insights into the possible mechanism of action of tofacitinib in synovitis, acne, pustulosis, hyperostosis, and osteitis (SAPHO) syndrome and the trend of stratified medicine.

As Xie *et al* highlighted, tofacitinib presented clinical and radiological efficacy in patients with SAPHO syndrome who had an inadequate response to tumour necrosis factor (TNF) inhibitors or bisphophonates. Similarly, a clinical trial proved that tofacitinib was effective in patients with TNF inhibitor-resistant psoriatic arthritis (PsA).[3] By inhibiting the Janus kinase-signal transducer and activator of transcription (JAK-STAT) pathway, tofacitinib modulates the network of a wide range of inflammatory cytokines, including interleukin-6 (IL-6), IL-17 and TNF-α, which were potentially involved in the pathogenesis of SAPHO syndrome.[4–10] We speculated that the multipathway inhibitory effect of tofacitinib might contribute to its efficacy in refractory SAPHO syndrome.

The heterogeneity of treatment response also raises the issue of stratified treatment approach in SAPHO syndrome. Clinical and genetic markers have been identified using machine learning to enable prediction of treatment responses to anti-TNF agents in rheumatoid arthritis.[11] Furthermore, Miyagawa *et al* proved that strategic treatment based on immunological phenotypes of the individual patient yielded a significant decrease in disease activity compared with routine treatment in PsA.[12] Given the high heterogeneity of SAPHO syndrome, we believe that further efforts in precision medicine may facilitate the understanding and management of the disease.

As mentioned by Xie *et al*, our retrospective study had a limited sample size and follow-up time. It was the first step to demonstrate a new potential treatment for SAPHO syndrome. Future controlled perspective study with a larger sample size and longer follow-up duration is required to establish the efficacy and safety of tofacitinib in SAPHO syndrome.

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