Response to: 'JAK inhibitors as promising agents for refractory Takayasu arteritis' by Watanabe

We thank Watanabe for his interest in our case report showing that tofacitinib, a janus kinase (JAK) inhibitor, successfully induced a remission of Takayasu arteritis (TAK) complicated by ulcerative colitis (UC)[1] and for providing some meaningful comments to supplement our discussion.[2] Watanabe wonders if JAK inhibitors can be effective in TAK patients without UC. In addition, he is concerned that types of JAK inhibitors may affect the efficiency in treating TAK. We agree that the issues should be evaluated in a large-scale case series and clinical study. According to a limited number of case reports, JAK inhibitors were effective in TAK regardless of coexisting UC and types of JAK inhibitors. Sato *et al* reported a similar case of TAK with UC successfully treated with tofacitinib (JAK1/JAK3 inhibitor).[3] On the other hand, Régnier *et al* reported that ruxolitinib or baricitinib (JAK1/JAK2 inhibitors) clinically improved TAK without UC in three patients.[4] They also demonstrated that the improvement was along with decrease of Th1/Th17-related cytokines and correction of effector/regulatory T-cell imbalance. However, as suggested by Watanabe, JAK inhibitors could modulate innate immunity composed of macrophages and natural killer cells in TAK.

For the management of refractory TAK, EULAR recommends considering tumour necrosis factor (TNF) inhibitor or tocilizumab,[5] although the evidence for TNF inhibitor depends on only open-label studies,[6] and a randomised controlled trial of tocilizumab failed to achieve its primary endpoint.[7] Tocilizumab rapidly normalises IL-6-driven serum inflammatory markers despite sustained vessel inflammation.[1 8] It can be confusing when the disease activity of TAK is correctly assessed. Thus, additional treatment options with clear evidence have been desired for TAK. To conclude, we believe that further studies should be conducted in refractory TAK for evaluating the efficacy and safety of JAK inhibitors as a promising agent.

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