

Resolution of retinal vascular leak with oral JAK kinase inhibitor tofacitinib (ID 56995)

Avinash Gurbaxani, Moorfields Eye Hospital , Dubai,
Nada Mustafa Hassan , Department of Rheumatology, Saudi German Hospital, Dubai

Financial interests: none

Background:

There have been several advances in the treatment of uveitis over the last decade, especially with the use of biologics like TNF inhibitors, in particular the licensing of adalimumab as the first systemic medication for the treatment of uveitis. Therapeutic options for rheumatoid arthritis have also expanded with the introduction of small molecule weight kinase inhibitors. We describe a patient with a known history of uveitis in whom active retinal vasculitis resolved after treatment with tofacitinib.



Initial presentation shows active posterior uveitis, disc leak but no CMO



Six months post treatment with oral tofacitinib, FFA and ICG shows resolution of vasculitis and disc leak

Discussion: Protein kinases are enzymes that modify other proteins and enzymes biochemically. This is done by activating or deactivating them. There are more than 500 protein kinases divided into 7 groups including tyrosine kinase of which the JAK STAT pathway is one. Four members of the JAK family have been identified: JAK-1, JAK-2, JAK-3 and TYP-2. Tofacitinib is a small molecule inhibitor of Janus kinase (JAK) 1 and 3. JAKs are proteins targeting pathways downstream of inflammatory cytokine receptors. They are important in intracellular downstream signaling mediated by a variety of cytokine receptors including but not limited to the IL-2 and IFN γ receptors. Tofacitinib has been approved by the FDA for the treatment of rheumatoid arthritis. In a randomized, controlled trial for RA, tofacitinib was comparable to a TNF inhibitor in efficacy. Tofacitinib has an advantage over the biologic (antibody) TNF inhibitors in that it is well-absorbed orally. At present, there are no studies elucidating its use in Uveitis. The use of topical eye drop preparation of tofacitinib has been studied in dry eye with favorable results. A case report shows resolution of keratitis in a patient after switching to tofacitinib for Rheumatoid Arthritis

Conclusion: This case report demonstrates the effectiveness of tofacitinib in the treatment of uveitis and retinal vasculitis. Further studies will be needed to validate this finding which should be pursued as this is an easy to administer treatment for patients.