Interleukin-6 blocker for successful outcome of late-onset rheumatoid oligoarthritis

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Abstract

Newer cytokine therapies have revolutionised the management of Rheumatoid arthritis. Atypical oligoarthritis can also be a manifestation of RA and CCP antibodies have been proven to be most specific for Rheumatoid. Our patient had 2 years of painful ankle bilaterally and suggested for joint replacement due to osteoarthritis changes. After the diagnosis of RA using Anti-CCP antibodies, we elected to give Tocilizumab(IL 6 Blocker) which had made the patient to walk without wheelchair after 2 years. This suggests early appropriate diagnosis is the key and Biologics- the new Kid in the market- has proven to be effective in early Rheumatoid arthritis.

Keywords: Tocilizumab, Oligoarthitis, IL-6 blocker, Anti-CCP antibodies, Rheumatoid arthritis

Introduction

Rheumatoid arthritis (RA) is a common systemic inflammatory disease affecting approximately 1% of the world population.[(1)] Interleukin 6 (IL-6) is a cytokine involved in the pathophysiology of RA, and its level in serum and synovial fluid correlates with the disease activity and joint destruction.[(2)] Tocilizumab is a humanized anti-human IL-6 receptor antibody, used in the treatment of RA. It blocks the IL6 membrane bound signalling and trans signalling thereby effectively blocking the interleukin 6.[(3)] Anti Citrullinated cyclic peptide antibodies are specific for Rheumatoid arthritis and only smoking can citrullinate the peptide. Early treatment during the “Window of opportunity” appears to reset the progression of the disease.[(4)] Tocilizumab has been approved for use in Rheumatoid arthritis since 2009.[(5)]

Case Report

A 68 year old female, presented with pain and swelling in the right ankle joint for two years and getting worse to the point of needing wheelchair assistance to mobilise. She denied any fever or trauma or weight loss. There was no other joint involvement or any features of rheumatoid. She had consulted 3 different surgeons who all suggested doing MRI ankle following which she was pencilled in for having ankle replacement but she declined. Medical history included hypertension and varicose veins of the legs.

Clinical examination revealed bilateral pitting pedal oedema in lower limbs at the ankle joints. The right ankle joint was swollen and tender with synovitis and left foot had oedema due to varicosity. Passive movement was restricted. She struggled to do her daily activities needing assistance from her husband.

Blood investigations	
ESR	67 mm
CRP	24
Anti-CCP	112 U/I

Other investigations showed normal blood count, renal and liver functions and normal ferritin.

MRI showed widespread synovitis with effusion in the ankle and mild cartilage destruction. There was neither marrow oedema nor tendon rupture. (Image 1)

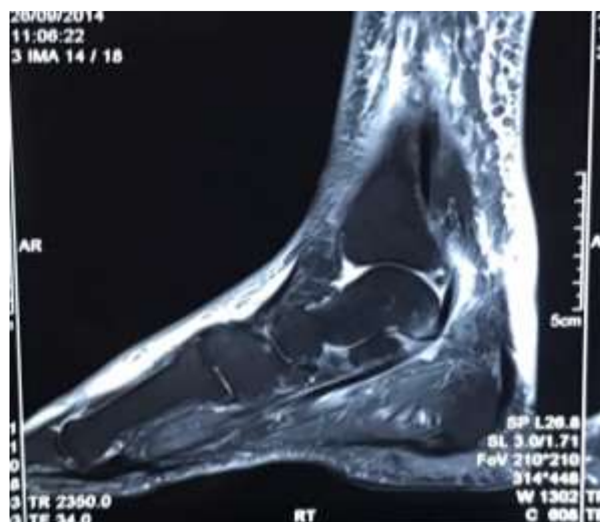

Image showing synovitis in the ankle joint

Diagnosis: She has had **CCP positive oligoarthritis** from the onset and now has worsened and infective pathology has been excluded. Following her significant response to corticosteroid injections, we counselled and prebiologic screening was done. She was given intravenous **Tocilizumab (Actemra) 8mg/kg (IL-6 blocker**). To her surprise she became pain free and was able to walk without support and very much delighted.

She continued the treatment every 4 weeks for 5 months and now she is on sulfasalazine and ambulant, not needed any analgesics.

Discussion

This patient had painful ankle and reduced movement and it’s rare for a patient to have ankle arthritis with RA. Although she had degenerative changes, bilateral disease- symmetrical- would suggest systemic problem and hence CCP was done. The mode of action of Tocilizumab is blocking Interleukin-6, thereby reducing inflammation and disease activity. MRI is sensitive to pick up early changes due to RA and patient’s concurrence to have it investigated and agreeing to expensive drug proved that newer cytokines do play a transformational role in the management of Rheumatoid arthritis.

Conclusion

Late onset oligoarthritis in elderly patient needs adequate evaluation and CCP antibody being positive with high CRP clinches the diagnosis of RA. Tocilizumab, an Interleukin-6 blocker has been proven to be efficacious in high CRP Rheumatoid. Newer biologics do play a significant role in immune-modulation and help to maintain good disease control thereby achieving better quality of life.

References

1. A, ‘Overview of epidemiology, pathophysiology, and diagnosis of rheumatoid arthritis.’ Am J Manag Care. 2012 Dec;18(13 Suppl):S295-302.
2. Srinivasan Srirangan et al. ‘Role of Interleukin 6 in the Pathophysiology of Rheumatoid Arthritis’ Ther Adv Musculoskelet Dis. 2010 Oct;2(5):247–256.
3. Jones SA, Richards PJ, Scheller J, Rose-Johns. IL-6 transignalling: the in vivo consequences. J Interferon Cytokine Res. 2005 May;25(5):241-53.
4. O'Dell, J.R. Treating rheumatoid arthritis early: A window of opportunity? Arthritis Rheum, 2000,46:283-285.
5. Désirée van der Heijde, Sofia Ramiro, Robert Landewé, Xenofon Baraliakos et al. 2016 Update of EULAR recommendations for the management of rheumatoid arthritis with synthetic and biological disease modifying antirheumatic drugs. Ann Rheum Dis. doi: 10.1136/annrheumdis-2016-210715.