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Rosuvastatin improves endothelial dysfunction in ankylosing spondylitis

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Background: Enhanced cardiovascular risk in Ankylosing Spondylitis (AS) provides a strong rationale for early therapeutical intervention. In view of the proven benefit of statins in atherosclerotic vascular disease, it was aimed to investigate the effect of rosuvastatin on Endothelial Dysfunction (ED) and inflammatory disease activity in AS.

Methods: 32 AS patients were randomized to receive 24 weeks of treatment with rosuvastatin (10 mg/day, n=17) and placebo (n=15) as an adjunct to existing stable antirheumatic drugs. Flow mediated dilatation (FMD) was assessed by Angiodefender TM (Everest Genomic Ann Arbor, United States). Inflammatory measures (BASDAI, BASFI, CRP and ESR) and pro-inflammatory cytokines (TNF-α, IL-6 and IL-1) were measured at baseline and after treatment. Lipids and adhesion molecules (ICAM-1 and VCAM-1) were estimated at baseline and after treatment.

Results: At baseline, inflammatory measures, pro inflammatory cytokines and adhesion molecules were elevated among both groups. After treatment with rosuvastatin, FMD improved significantly ($p<0.01$). Levels of inflammatory measures, TNF-α, IL-6 and ICAM-1 decreased significantly ($p<0.01$) after treatment with rosuvastatin. Rosuvastatin exerted positive effect on lipid spectrum. No significant change in the placebo group. Significant negative correlation was observed between FMD and IL-6, ICAM-1, CRP after treatment with rosuvastatin.

Conclusion: First study to show that rosuvastatin improves inflammatory disease activity and ED in AS. Rosuvastatin lowers the proinflammatory cytokines, especially IL-6 and TNF-α, which downregulates adhesion molecules and CRP production which in turns improves ED. Improvement in endothelial dysfunction in AS occurs through both cholesterol independent and dependent pathways. Rosuvastatin can mediate modest but clinically apparent anti-inflammatory effects with modification of vascular risk factors in the context of high-grade autoimmune inflammation of AS.

Biography

Nidhi Garg completed M.Pharmacy in pharmacy practice in 2008 and currently she is a doctoral research fellow in Department of Pharmaceutical Sciences and Drug Research, Punjabi University, Patiala. She has published more than 9 national and international publications in reputed journals and 18 national (IRACON) and international (EULAR, APLAR and ACR) conference proceedings. She also has two year teaching experience as a lecturer in pharmacy college. Last year she was invited for poster presentation on "*Nitric Oxide as a biomarker of disease activity and therapeutic response in Rheumatoid arthritis and Ankylosing Spondylitis" at ACCP 2013, Haiphong, Vietnam*. Presently she is working on cardiovascular diseases, stem cells and effective therapy in rheumatic patients.

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