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Short Communication

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Targeted drug delivery of injectable in situ gel of Methotrexate sodium for the treatment of Rheumatoid Arthritis

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Abstract:

The present study aims to develop MTX-S (Methotrexate sodium) in situ gels as an effective way for the treatment of rheumatic arthritis (RA). The in situ gels composed of Pluronic F-127 as a polymer and Hydroxy Propyl Methyl Cellulose K4M (HPMC K4M) and Polycarbophil (PCL) as copolymers were manufactured by cold method. The in situ gels were characterized for gelation time, gelation temperature, syringeability, viscosity, sterility, in vitro release and drug content. The biocompatibility and efficacy of MTX-S in situ gels ascertained using histology analysis and Freund's complete adjuvant model respectively. The results of the present study showed that the optimized formulation (M4) was thermo-sensitive and exhibited drug release of 93.26±2.39 at 96 h. Moreover, MTX-S was evenly distributed in the optimized formulation which was sterile and syringeable through 18 gauze needle. In vivo study on the wistar rats showed significant decrease in rat paw volume during a 28 day study period. Thus, MTX-S in situ gel could be successfully used for targeting specific treatment of RA.

Biography:

Dr. M. P. Venkatesh has completed his Masters program in Industrial Pharmacy from RGUHS, Bangalore (2006) and PhD from JSS University, Mysuru (2013). He is the Assistant Professor in Dept.of Pharmaceutics, JSS College of Pharmacy, Mysuru. He has published more than 50 papers in reputed journals and has been serving as an reviewer for many reputed journals in related areas of research. He has guided more than 30 M.Pharm and MDS students and currently gudiing 6 Ph.D. scholars and 6 M.Pharm students. He is working on novel delivery systems for effective managament of rheumatoid arthritis.