Objective of the present work:-

Need of work:-

Lornoxicam a novel highly selective COX-2 inhibitor and potent enolic acid (oxicam) derivative used in the treatment of pain resulting from inflammatory diseases of joints, osteoarthritis, surgery and sciatica used for a variety of acute and chronic inflammatory diseases. However, it’s very low aqueous solubility and poor dissolution in upper gastric fluid cause formulation problems and limits its therapeutic application by delaying rate of absorption and finally the onset of action. It is ten times more potent than other oxicam derivatives like piroxicam and tenoxicam. Its daily dose is 8-16 mg taken before meal. Daily dose above 8 mg should be divided into two or more doses. It inhibits prostaglandin biosynthesis by blocking enzyme cyclooxygenase. It inhibits both isoforms in the same concentration range i.e. the ratio of COX1 inhibition to COX2 inhibition is 1:1. It readily penetrates into synovial fluid. Its partition coefficient (n- octanol to phosphate buffer of pH 7.4) is 1.8. It is completely insoluble in water and slightly soluble in simulated gastric fluid. It is absorbed rapidly and almost completely from g.i. tract. Maximum plasma conc. is achieved after approximately 1 to 2 hrs. Combination with vit.k antagonist like warfarin increases risk of bleeding. Together with permeability, the solubility and/or dissolution rate of a drug are key determinants of its oral bioavailability. It is generally considered that compounds with very low aqueous solubility will show dissolution rate limited absorption and hence poor absorption, Improvement of aqueous solubility in such a case is a valuable goal to improve therapeutic efficacy.

Due to various limitations of lornoxicam the aim of the present work is to enhance the solubility of lornoxicam using nanosuspensions method with different stabilizers, surfactant and lipids convert into solid form by spray drying technique so that solubility can be improved. This is then is expected to lead to better bioavailability.