

## Research Paper

### FORMULATION AND *IN-VITRO* EVALUATION OF LIPOSOMAL DRUG DELIVERY SYSTEM OF METFORMIN HCl

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Metformin is widely used for the treatment of diabetes; the intention of the present study was to formulate Metformin HCl liposomes for a sustained drug delivery system. It has the advantages of dose reduction, less dosing frequency, minimize the side effect, prolong the action of drug and thus achieve better patient compliance. The liposomes were prepared by physical dispersion and ether injection method. Soya lecithin and cholesterol were used for encapsulating the drug, it facilitates to release the medicaments in sustained manner. Chloroform, ether and methanol were used as a solvent. Phosphate buffer pH 6.8 was used as a hydration medium for loading the drug. The final liposome was evaluated in various quality parameters of drug entrapment efficiency, morphological analysis, particle size analysis, *in-vitro* drug release studies and stability studies. In the two methods of metformin liposome formulation the ether injection method showed prolonged action when compared to physical dispersion method. In the parameters of drug entrapment and stability physical dispersion method shows better results.

**Key words:** Physical dispersion, ether injection, soya lecithin, cholesterol, morphological analysis, metformin.