2. NEED FOR THE STUDY

Many diabetic dyslipidemic patients take more than 10 medications daily and some patients take in excess of 20\textsuperscript{5-7}. Several studies involving agents to treat hypertension and dyslipidemia have noted that patient adherence declines as the number of prescribed medication increases\textsuperscript{8-10}. So in this condition fixed dose combination (FDC) are recommended to overcome the problems.

FDC are medicines which contain two or more drugs in fixed proportions in the same formulation. FDC products are often claimed to make medicine-taking more convenient for patients taking multiple medication with the potential of improving concordance. They are also a means of prolonging the patent life of a product. Although oral combination therapy has mostly been undertaken with separate formulation for each agent, this increases the pill burden for the patients who are already likely to be treated with several other medications\textsuperscript{5}.

An extensive literature survey revealed that there are number of synergistic drugs combination available for the treatment of cardiovascular disease which are associated Type 2 diabetes mellitus, like-

a) Glimepiride and atorvastatin calcium.

b) Pioglitazone and simvastatin.

c) Glibenclamide and atorvastatin calcium.

Here, three novel FDC formulations were developed: Multiple Unit Pellet System (MUPS), Compression-coated tablets and Nanoparticles with tailored drug release profiles to overcome the disadvantages associated with present conventional marketed
formulations, were patients need to administer the different dosage forms separately for anti-diabetic and dyslipidemic drugs, leading to noncompliance to patients, fluctuating drug blood levels and finally increased cost. The proposed novel drug delivery systems will prevent the glucose-loading induced elevation of glucose levels along with reduced levels of low-density lipoprotein (LDL) and triglycerides suggesting a better response than monotherapy with anti-diabetics alone and finally increasing the quality of life in diabetic patients.