OBJECTIVE

Globally, the occurrence of diabetes is increasing at an alarming rate. Type-II diabetes represents about 98% of all diabetes cases, in population older than 45 years of age. Medication-related problems leading to morbidity and mortality are quite common with the disease. For diabetic patients, medication becomes an integral part of life and noncompliance of therapy may lead to chronic complications.

Type -II diabetes is even occurring in adolescence, in association with the increase in childhood obesity and also with the influence of maternal diabetes. Type -II diabetes in the 21st century is no longer a disease of late middle age. Management strategies need to tackle public-health issues such as obesity and lack of exercise as well as incorporating drugs that address the underlying pathophysiology of type -II diabetes. Fortunately, our understanding of that pathophysiology is now becoming clearer and this knowledge is to yield new agents of therapeutic promise such as repaglinide and nateglinide.

Repaglinide is a short-acting oral hypoglycemic agent used as a prandial glucose regulator in the management of type -II diabetes mellitus.

The drug possesses low oral bioavailability (56 %) due to hepatic first pass metabolism after oral administration and poor absorption in the upper intestinal tract. It has a very short biological half-life of ~1h, which makes frequent dosing necessary to maintain the drug within the therapeutic blood level for longer period. Moreover it produces hypoglycemia; causes gastrointestinal adverse effects including abdominal pain, diarrhoea, constipation, nausea and vomiting after oral administration. Because diabetes is a chronic disease hence the treatment is intended over a prolonged period of time. Transdermal delivery systems may provide a useful drug therapy with regard to patient compliance.

Transdermal delivery can bypass the first pass metabolism and deliver the drug in a rate-controlled manner, which is desirable in anti-diabetic therapy. With this view an attempt will be made to deliver repaglinide in effective therapeutic concentration in TDD form.