

21.1. HYPOGLYCAEMIC AGENTS

21.1.1. Introduction

Hypoglycaemic agents treat diabetes mellitus by reducing the blood glucose levels. Except insulin, exenatide, liraglutide, and pramlintide, all other agents are orally administered, and thus are also called **oral hypoglycaemic agents** or **oral anti-hyperglycaemic agents**.

Diabetic condition is of **two types**:

- 1) Insulin deficiency results in **diabetes mellitus type 1**. In this condition, insulin should be injected.
- 2) Insulin resistance by cells causes **diabetes mellitus type 2**. This condition is the most common type of diabetes, and is treated with:
 - i) Agents which increase the amount of insulin secreted by the pancreas,
 - ii) Agents which increase the sensitivity of target organs to insulin, and
 - iii) Agents which decrease the absorption rate of glucose from GIT.

21.1.2. Classification

Hypoglycaemic agents are classified as follows and their selection depends on the type and extent of diabetes, age and condition of person, etc.:

Classes	First Generation	Second Generation
Sulfonylureas	Tolbutamide and Chlorpropamide	Glibenclamide Glipizide Gliclazide Glimepiride
Biguanides	Phenformin	Metformin
Meglitinide Analogues	Repaglinide	Nateglinide
Thiazolidinediones	Rosiglitazone	Pioglitazone
α-Glucosidase Inhibitors	Acarbose	Miglitol

21.1.3. Individual Compounds

The following drugs are studied in detail:

- 1) Insulin,
- 2) Chlorpropamide,
- 3) Tolbutamide,
- 4) Glibenclamide,
- 5) Phenformin, and
- 6) Metformin.