

Drugs Used in Diabetes - Choice of Insulin

The choice of an insulin depends upon the condition of the patient. In emergencies such as diabetic coma, crystalline insulin (only soluble insulin) is preferred because of its quick onset of action. It is repeated at 6-hour intervals given intravenously usually, until the situation is under control. Crystalline insulin is also employed in combination with intermediate-acting insulin preparations for quick action. However, a dose of intermediate-acting insulins taken before breakfast is effective in controlling most cases of diabetes, other than some cases of juvenile diabetes, in which there is a marked rise in blood sugar during the night and in which, an additional evening dose may be needed. The use of long-acting preparations, with the hope of a single injection for controlling diabetes, has been disappointing and is not advocated. Premixed mixture of crystalline and lente insulin (Biphasic insulin) are convenient for tighter control of fasting and post meal blood glucose elevation. A large number of such preparations are available in the market. A convenient device is insulin pen (Nayolet) which has premixed insulin mixture and can be put into packet by executives or others who are on the move. It is, however, expensive, although the price may come down in the future.

Dosage: The dose varies with the severity of the condition and the response of the patient. Repeated estimation of blood sugar during the treatment is helpful in adjusting the doses. In general, the treatment is started with an intermediate-acting preparation and a dose of 10 to 15 units is given; 2/3 dose is given before breakfast and 1/3 dose before dinner. This is increased by 5 units per day with a constant monitoring of glucose levels of blood and urine till satisfactory control is achieved.

All the preparations of insulin are ineffective orally and have to be injected under the skin. Recently, computer-assisted, battery-driven implantable devices have become available, which inject insulin appropriate to the requirements (insulin pumps). Usually highly purified insulins are used in these devices. It will be a major breakthrough in this field if someone discovers a drug as effective as insulin that can be given orally.

Newer Insulins

Newer insulins are now available. They are 3 to 5 times more expensive. They have the advantage that insulin allergy, fat loss at the site of injection, and sometimes, fat accumulation, occur less frequently. The possibility of the formation of anti-insulin antibodies is also less.

Adverse Effects: The most common adverse effect is hypoglycaemia. Hypoglycaemia may be caused by the delay or omission of meals or by unexpected exertion. The symptoms of hypoglycaemia include intense hunger, sweating, palpitation of the heart, tremors, weakness, and irritability. These symptoms can be recognized early and can be relieved by sugar, glucose or sweets in 10 to 20 minutes. If you are taking acarbose with insulin injection then use only glucose and not household sugar. It is to be noted that long standing diabetics may not notice all of these symptoms of low blood sugar.

Insulin may cause allergic reaction at the site of the injection, characterized by stinging and itching sensations associated with reddening and swelling of the skin. Generalized allergic reactions are rare. Human insulin does not cause allergic reactions. Repeated injections of insulin at the same site may cause depression or elevation at the injection site (Lipodystrophy). In rare cases patients may not respond to insulin (due to insulin resistance). These problems are uncommon with human insulins.

Precautions

Use disposable insulin syringes only for insulin by self-injection.

Reduce the dose of insulin if a meal is likely to be missed or physical exertion is likely.

Take sugar or glucose if any symptoms of hypoglycaemia appear.

Consult the doctor immediately if any allergic reaction occurs.

Rotate the site of insulin injection i.e start from one thigh, then rotate to abdominal wall then forearm then upper arm after one side rotate to the next side.

About the Author

AdvCare is one of the leading [Canada drugs](#) websites. First established in January 2000, its mission is to become the number one site for [ontario drug](#) and [prescription medication](#) searches.

