Insulin

Insulin: A hormone secreted by the beta cells of the islets of Langerhans Pancreas, which is required for the metabolism of carbohydrates, proteins and fats, and its deficiency leads to diabetes mellitus.

Equipment of Injecting Insulin:

- Insulin Syringe
- Insulin pen
- Insulin vial

Insulin injection sites:

The rate of insulin absorption is in the injectable areas, respectively: abdomen, arms, thighs and buttocks.

Insulin in terms of duration

Fast-acting insulin: Lispro and Sparta

- Onset of action: 5 to 15 minutes
- Short-acting insulin: Regular
- Onset of effect: 0.5 to 1 hour

Medium-acting insulin: NPH or Insulin pads

- Onset of action: 2 to 4 hours

Long-acting insulin: Ultrant

- Onset of action: 6 to 8 hours

How to inject insulin

- Wash your hands thoroughly before each injection.
- If you use NPH insulin, gently roll the glass between your hands, but do not shake the glass.
- Clean the plastic cap with an alcohol swab.
- Inject air into the glass as much as insulin you need (to prevent the formation of a vacuum inside the glass)
- First draw regular insulin and then NPH
- After drawing insulin into the syringe, remove the air with a few blows to the body of the syringe.
- If you use alcohol cotton before the injection, it must be dried, otherwise the alcohol may enter the tissue and cause redness of the site.
- Inject subcutaneously (Q.S) at a 90-degree angle.
- Observe safe injection technique.
- Throw out the needle into the Safety Box.
Complications of insulin therapy

- **Topical allergic reactions**: swelling, redness, tenderness and stiffness at the injection site, which occurs 1-2 hours after injection.
- **Systemic allergic reaction**: Occurs with urticaria throughout the body, starting with small doses of insulin for treatment and gradually increasing the dose.
- **Insulin lipodystrophy**: Occurs at the site of insulin injection and may have indentations in the skin.
- **Insulin resistance**: The most common cause is obesity
- **Morning hyperglycemia**

Important notes

- Opened insulin vials can be stored in the refrigerator for up to 28 days at 2 to 8 °C.
- Note the expiration date of the insulin.
- Regular change of the injection sites in each anatomical area is recommended to prevent lipodystrophy.
- Insulin temperature should be at room temperature, remove it from the refrigerator 30 minutes before injecting.
- It is best to take insulin 20-30 minutes before a meal.
- Symptoms of hypoglycemia (shivering, sweating, anger, hunger, weakness) and hyperglycemia that cause diabetic ketoacidosis

**Symptoms of DKA**: Abdominal pain, nausea, vomiting, increased number and depth of breathing, the smell of fruity breath, which if it is left untreated it can change the level of consciousness, coma and even death.

Take diabetes seriously and live easier by controlling it.

If you have any questions or ambiguities, call the following number:

023-34222234, Motamedi Hospital