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Diploma in Pharmacy 2nd Year
Community Pharmacy & Management
Experiment

To provide counselling to patients with type-2 diabetes and to educate on the use of insulin pen.

Aim:

To provide counselling to patients with type-2 diabetes and to educate on the use of insulin pen.

Reference :

‘ Dr. Gupta G.D. , Dr. Sharma Shailesh, Dr. Gupta Richa, “Practical Manual of Community Pharmacy and Management” Published by Nirali Prakashan, Page no 36 – 39

Materials Required

The prescribed insulin pen, pen needles, alcohol wipes, and a container for used Equipment

Theory :

Diabetes is a chronic condition with altered carbohydrate, lipid and protein metabolism, and also affects the quality of life in diabetic patients. Factors like understanding of the patients about their disease, dietary regulation, and self- monitoring of blood glucose are important in diabetes management. Patient counselling and education by the pharmacist improves the quality of life of these patients.

Type-2 diabetes mellitus is characterised by disorders of insulin action and insulin secretion. Patients have relative insulin deficiency (in contrast to absolute insulin deficiency in type I diabetes).

Patient Counselling Points

- The pharmacist gives an overview of diabetes, stress and psycho-social adjustment, family involvement and social support, nutrition, exercise and activity, monitoring and use of results, relationship between nutrition, exercise, medication, and blood glucose level.
- The complications of diabetes can be reduced by glycemic control.
- The anti-diabetic drugs possess some uncharacteristic features such as "Taken half an hour before food" in case of sulfonylureas.
- The patients should be made aware of hypoglycaemic condition during
- insulin therapy.

Table 6: Drug Counselling Points in Diabetes

Drugs	Pharmacist Role
Sulfonylureas	The pharmacist should describe how to prevent, identify, and treat hypoglycaemia. He/she should check the patient for jaundice symptoms. He/she should ask about the administration time in relation to food and the necessity for alcohol abstinence and any sulphur sensitivity history.
Insulin	He/she should describe how to prevent, identify, and treat hypoglycaemia. He/she should educate the patient on improved insulin administration strategies and optimal insulin storage conditions. He/she should instruct the patient to bring chocolates or other sweets with him on the trip and not to skip meals.
Metformin	He/she should advise the patient to take the medication with or after meals. He/she should check the patient for muscle soreness, unexplained tiredness, nausea, stomach pain, and weight loss.
Thiazolidinediones	He/she should take a history of any previous liver disorders, and observe the patient for yellow discoloration of urine. He/she should check the patient for signs of peripheral oedema.
Acarbose	He/she should encourage the patient to take the drug with the first food bite. He/she should check the patient for cramping and stomach pain. He/she should advise the patient not to consume sucrose (sugar) during a hypoglycaemic crisis since it may interfere with acarbose absorption.

Insulin Pen

A needle-equipped injecting tool called an insulin pen is used to inject insulin into the subcutaneous tissue (the tissue between skin and muscle).

Types

1) **A Disposable Pen :** It consists of prefilled insulin cartridge. The entire pen unit is discarded after use.
2) **A Reusable Pen :** It consists of reusable insulin cartridge. The cartridge is removed and installed after use.

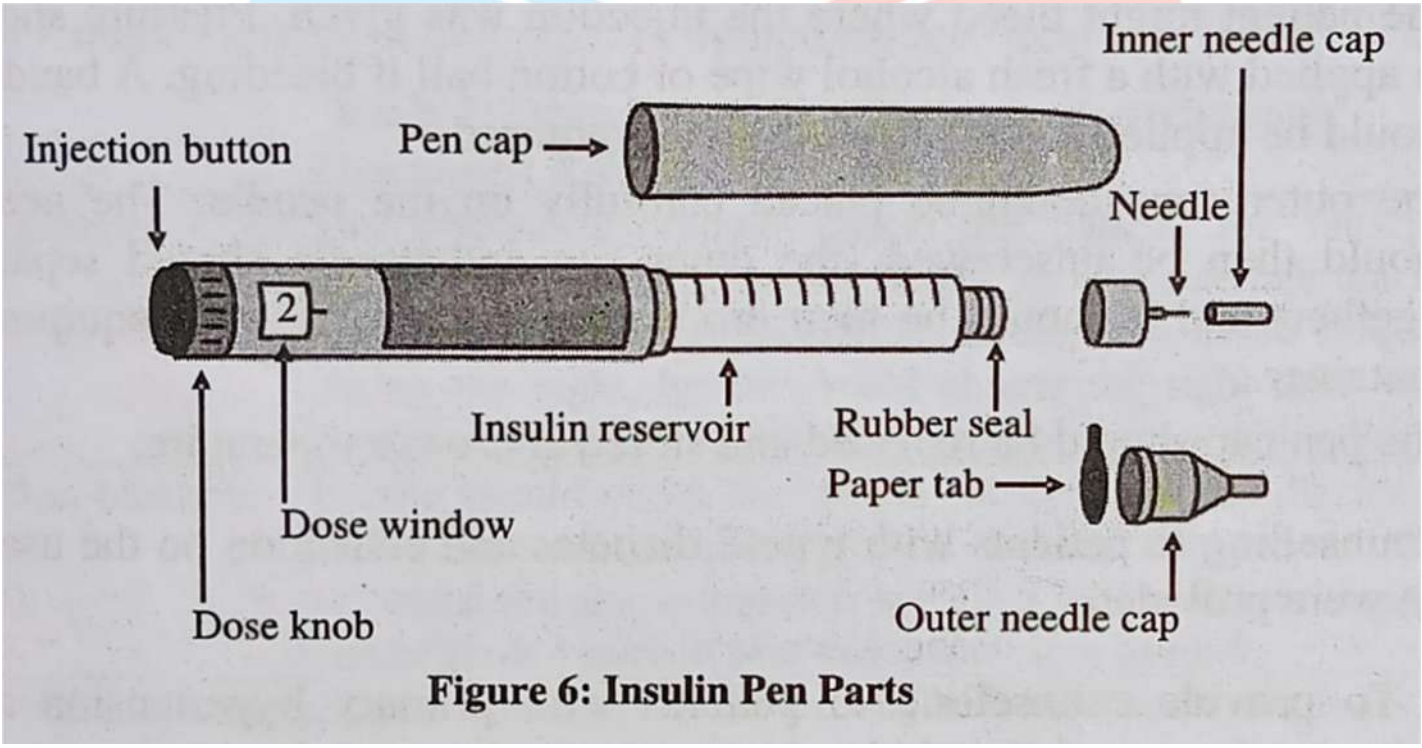

Figure 6: Insulin Pen Parts

Steps to Use Insulin Pen

1) Hands should be washed before performing it.
2) The cap of insulin pen should be removed.
3) The pen should be rolled in hands and turned from side to side for a minute if the insulin in the pen appears cloudy. The pen should not be rolled if insulin is completely cleared. The pen should not be shaked.
4) The rubber stopper should be wiped with alcohol wipe.

5) A new pen needle should be attached onto the insulin pen. There are several sizes of pen needles. Healthcare provider should be talked about the pen needle that is most suitable.
6) The paper tab should be pulled off the pen needle, the new needle should be screwed onto the pen, and the outer cap of the needle should be removed in order to attach the pen needle. The needle should be removed with the help of outer cap when injection is finished. The internal cover should be removed.
7) The insulin pen should be primed. Removing of air bubbles from the needle and ensuring that the needle is open and working is known as priming. Each injection should be preceded by priming the pen.
8) The dosage knob should be turned to the 2 unit indicator to prime the insulin pen. The knob should be pushed in all the way when the pen is pointing up. There should be at least one drop of insulin visible. This step should be repeated if required until a drop appears.
9) The dose of insulin should be selected that has been prescribed for the patient by turning the dosage knob.
10) The accurate dosage should be verified. The pen should be set down without allowing the needle makes contact with anything.
11) Following steps should be followed to inject insulin using an insulin pen:
    - The insulin pen should be placed in the hand. Fingers should be wrapped around it and the thumb should be left free to push down the knob.
    - The needle should be inserted with a quick motion into the skin at 90° angle. The skin should be completely penetrated by the needle.
    - The knob of the pen should slowly be pushed all the way in order to deliver full dose. It should be kept in mind that pen should be held at the site for 6-10 seconds and then the needle should be pulled.
    - The patient might bleed where the injection was given. Pressure should be applied with a fresh alcohol wipe or cotton ball if bleeding. A bandage should be applied to the injection site if required.

- The outer cap should be placed carefully on the needle. The needle should then be unscrewed (the outer cap and needle should separate together) and it should be then dropped in the old "sharps" equipment container.
- The pen cap should be replaced and stored at room temperature.

Result :

Counselling to patients with type-2 diabetes and education on the use of insulin pen were provided.

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