Type 2 Diabetes: Case Study Of A 65 Year Old Male Suffers From Long Term Type 2 Diabetes Mellitus

History:

My patient, a 65-year-old male suffers from long term Type 2 diabetes mellitus. He currently has no symptoms and no recent triggering events suggesting that his diabetes are controlled for now. The patient explained how certain food types containing high levels of sugar increases his blood glucose and causes hyperglycaemia.

HPC:

Upon triggering hyperglycaemia, the patient generates many symptoms such as:

- Thirst - Nocturia
- Tiredness - Polyuria

The patient was first diagnosed with Type 2 Diabetes Mellitus at the age of 40. Diagnosis was first made after a blood glucose test was done while fasting the night before. The patient experienced many symptoms before his diagnosis such as dizzy spells, polyuria and felt very lethargic. Due to this long term illness, the patient now suffers from many complications such as:

- poor wound healing,
- nephropathy
- retinopathy

The patient’s development of chronic kidney disease and loss of sight was previously due to poorly controlled diabetes. Recently the patient also was referred to hospital as he suffered from a diabetic foot ulcer and had a cast for many months due to impaired wound healing. This had a major impact as the patient struggled to walk.

Drug History:

At first when the patient was diagnosed, he was initially prescribed Metformin.

- Metformin: The first line of medication given to Type 2 diabetes patients. It decreases blood sugar levels by increasing peripheral usage of glucose to help the body handle insulin better. The patient was advised to take 500mg once daily of this medication preferably with breakfast.1

Metformin was no longer suitable for the patient as other complications arose form this. He is now prescribed Gliclazide and Linigliptin.

- Gliclazide: It is a sulfonylurea2 drug that increases the amount of insulin that your body

makes.3 It is mainly effective when only residual pancreatic beta cell activity present2. Gliclazide occasionally causes hypoglycaemia so it is always advised for the patient to carry some sugar related products with them3. The patient takes one tablet once daily after breakfast.
- Linigliptin: This drug is usually taken if metformin is inappropriate to take for the patient. It inhibits dipeptidylpeptidase-4 to increase insulin secretion and lower glucagon secretion. The patient takes this once daily (5mg).4

Social History:

The patient has never smoked and stopped drinking alcohol many years ago.

Family History:

Many of the patient's family members had a history of diabetes mellitus. The patients mother and father and wife suffered from Type 2 Diabetes mellitus.

Main Complaint:

Type 2 diabetes is a chronic metabolic condition caused by insulin resistance. This occurs when the body fails to use insulin effectively and pancreatic insulin production becomes deficient. There are many risk factors associated with Type 2 diabetes such as obesity, high blood pressure, lack of exercise and disturbance in blood lipid levels.5 Due to these factors the risk of cardiovascular conditions can also increase. There are many cardinal signs associated with Type 2 diabetes mellitus. These symptoms are polyuria (particularly at night), excessive thirst, very lethargic, poor wound healing when there are cuts and wound on skin and blurred vision. 6

Diagnosis and Testing:

Diagnosis is based on thorough history taking by an experienced clinician. This should include assessing glycemic control, patient's recent blood glucose and levels of frequency hypoglycaemic episodes. The patient should also be asked about their medications type, dosage and times of administration.10 There are many investigations that can be done for diabetes diagnosis such as blood glucose test and refer the patient to the GP to check their urine.7

Management of Type 2 Diabetes Mellitus:

NICE guidelines states the type of responsibility and support that should be provided for an adult with Type 2 diabetes at the age of 18 years onwards. These are,8

- Ensure that an individually care plan is set up for all adults with Type 2 diabetes
- Offer a structured group education programme e.g. DESMOND (Diabetes Education for Self- Management for Ongoing and Newly Diagnosed)
- Ensure that the person or members of the family know how to contact the diabetes team
- Provide information on government disability benefits (if needed)
- Manage lifestyle issues such as diet and exercise

- Screen for complications such as retinopathy to minimise the risks
- Provide up-to-date information on diabetes support groups

Dental Management: Dental clinicians need to consider certain factors before initiating dental treatment to prevent the risk of a medical emergency. One of the medical emergencies that can happen with Type 2 diabetes is hypoglycaemia (low blood sugar). Hypoglycaemia is treated in many ways:11

- Treat with a sugary snack and test your blood sugar after 10-15 mins if patient is conscious
- Put patient in recovery position and don’t put anything in their mouth. Give a glucagon injection middle third off the thigh if patient is unconscious or very drowsy

Patients undergoing major surgical treatment may require an adjustment to their insulin dosage or medications. 1

Oral Manifestations: Diabetic dental patients can be at threat for dental disease. High blood glucose levels can have an impact on periodontal health as it is a risk factor for periodontitis. There are many oral complications associated with poorly controlled diabetes mellitus. These are:9

- Xerostomia
- Burning sensation
- Gingivitis periodontitis
- Dental caries
- Bacterial, viral And fungal infections
- Periapical Abscess

It is very important to regularly monitor blood glucose levels to prevent these risks.

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