Hypoglycaemia

Hypoglycaemia is a potentially serious complication of treatment in type 2 diabetes patients, especially among the elderly, people with renal insufficiency and people with severe micro- and macroangiopathy.

Both the UKPDS and the Kumamoto Study (Japan) findings suggest it is still necessary to strictly control blood glucose levels for the majority of type 2 diabetes patients, to prevent retinopathy and nephropathy. However, the risk of hypoglycaemia is increased with strict control as is the chance of weight gain; therefore, flexibility should be exercised in individual cases.

Patients receiving long-acting sulphonylureas or insulin are particularly at risk. The risk is highest at night, in the elderly, and in those patients with renal failure or liver disease.

Causes of hypoglycaemia and response

Insulin or sulphonylurea overdose

At the beginning of treatment, the doctor should start with a low dose and gradually increase, adjusting the dose carefully.

Decrease, delay or omission of meals

Patients should have a stable amount of food, regular meal times and should decrease drug dosage if they cannot tolerate their usual amount of food.

Increase of physical exercise

Extra complex carbohydrates should be eaten before exercising.

Excessive alcohol intake, particularly without food

Patients should not drink more alcohol.

Action

If hypoglycaemia is suspected, a blood glucose level measurement is needed to confirm the diagnosis.
NOTE: If blood glucose levels cannot be measured, treat as hypoglycaemia.

The conscious patient

Administer an oral carbohydrate, such as sugar or glucose, as soon as the patient is conscious.
NOTE: Hypoglycaemia induced by the longer-acting sulphonylureas (or long-acting insulin) can be prolonged. It is important to monitor glucose levels for at least 24–48 hours after the patient regains consciousness.

A long-term glucose infusion may be needed and the patient should be admitted to hospital.

The unconscious patient

Administer 20 ml 50% glucose intravenously or 0.5–1 mg glucagon intramuscularly.
Provide oral carbohydrates as soon as the patient is conscious.
NOTE: Hypoglycaemia induced by the longer-acting sulphonylureas (or long-acting insulin) can be prolonged. It is important to follow glucose levels for at least 24 hours.

A long-term glucose infusion may be needed and the patient should be admitted to hospital.

Behavioural disturbances and other unusual symptoms are more frequent in the elderly patient during hypoglycaemia. Hypoglycaemia does not occur during dietary, α-glucosidase inhibitor or biguanide therapy. However, the combination usage with other agents may cause hypoglycaemia.