HYPOGLYCEMIA

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UNIWERSYTET MEDYCZNY W ŁODZI

Plasma glucose levels ranges:

70 – 110 mg/dl

Between the meals and durind fasting this plasma glucose levels are maintained by:

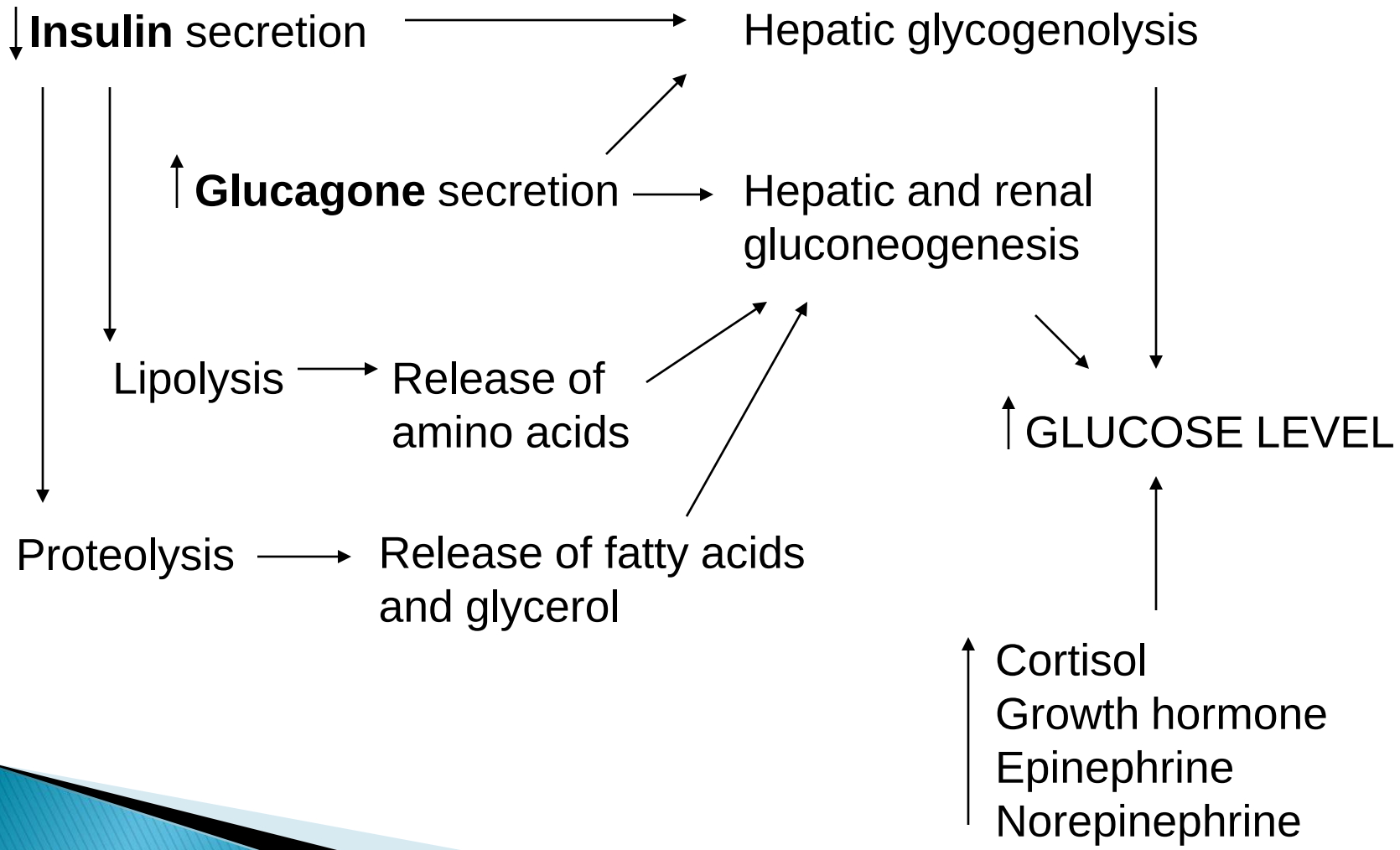
1. endogenous glucose production
2. hepatic glycogenolysis (sufficient for ~8h)
3. hepatic and renal gluconeogenesis

Glucose level
< 55 mg/dl (3 mmol/l)

+ = **HYPOGLYCEMIA**

Symptoms that are relieved
after the glucose level raises

Defence against hypoglycemia:



Hypoglycemia – symptoms

Glucose is an obligate metabolic fuel for ….

That is why hypoglycemia gives the symptoms of neuroglycopenia:

Behavioral changes, confusion, fatigue, seizure, loss of consciousness, death

Other symptoms:

Palpitations, tremor, anxiety (sympathetic neurons)

Sweating, hunger, paresthesis (cholinergic neurons)

Patient with hypoglycemia

- Pail
- Diaphoretic
- Anxious
- High heart rate
- High systolic blood pressure
- Wide pupils
- Alteration of consciousness

Treatment of diabetes is the most common cause of hypoglycemia:

→ Insulin

→ Sulfonylureas

Mechanisms and risk factors:

1. Excessive doses
2. Insufficient glucose intake
3. Increased glucose utilisation
4. Increased sensitivity to insulin
5. Reduced endogenous glucose production (alcohol)
6. Reduced insulin clearance
7. Drugs: salicylates, pentamidine, quinidine, disopyramide, non-selective β-blockers
8. Hormones defficiencies
9. Endogenous hyperinsulinism

Insulin-defficient diabetes → autonomic failure

1. Reduce sympathoadrenal response to hypoglycemia
2. Hypoglycemia unawareness
3. Defective glucose counterregulation
4. **Recurrent hypoglycemia – each incident of hypoglycemia increases the risk of succeeding hypoglycemia!!!**

Hypoglycemia – treatment

- The patient conscious and able to swallow: 20 g glucose (glucose-containing fluid, food, candy)
- Unwilling patient:

1. 25 g intravenous glucose, followed by the glucose infusion
2. 1 mg glucagone intramuscular (T1 DM!)

Reveal the cause of hypoglycemia – causal treatment is necessary!