



## 10. RECURRENT HYPOGLYCEMIA IN PATIENTS WITH DIABETES AND LIVER CIRRHOSIS – A REAL THERAPEUTIC CHALLENGE

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**Introduction.** Diabetes is a global health problem, currently about 540 million adults suffer from diabetes, according to data published by the International Diabetes Federation. Approximately 20-60% of patients with cirrhosis have diabetes, 60-80% may have impaired glucose tolerance, and 100% of patients exhibit insulin resistance. One of the most worrying consequences of diabetes is hypoglycaemia.

**Case statement.** Case presentation. A 49-year-old man was urgently admitted in an extremely serious condition with the following symptoms: drowsiness, lethargy, dizziness, severe hypoglycemia - glucose level 2.6 mmol/l. Concomitant pathologies: diagnosed with Type 2 Diabetes for 3 years; Toxic liver cirrhosis, decompensated Child-Pugh C. Ambulatory he administered long acting Insulin – Lantus 25 Un, s/c, in the evening, without blood sugar control. At the objective clinical examination – dry, icteric, cold skin; passive position; in the lungs - vesicular murmur; RR -19 breaths/min, SpO<sub>2</sub> – 94%, heart sounds, diminished, TA – 90/60 mmHg, heart frequency 102 beats/min. Abdomen - enlarged in size, the liver +4 cm under the costal rebord. Glasgow Scale - 12 points. Paraclinical investigations at admission detected – blood glucose level - 2,8 mmol/l, severe cytolytic syndrome, moderate cholestatic syndrome and HbA<sub>1C</sub> 10,9%, C-Peptid – 2,2 ng/ml. Despite high doses of bolus glucose (>100 g I/V), the hypoglycaemia persisted and the patient was transferred to intensive care unit for appropriate treatment. During hospitalization in the intensive care unit, the patient had several recurrent hypoglycemic episodes.**Discussions.** The management of patients with cirrhosis of the liver and diabetes is a real challenge in the context of the major risk of hypoglycemia in this category of patients. The incidence of hypoglycaemia in patients with severe liver disease is up to 56%. The patients with type 2 diabetes and cirrhosis have a 2.7 times higher risk of hypoglycaemia than those without cirrhosis. The dietary recommendations should ensure glycaemic control and avoid worsening sarcopenia and malnutrition. The caloric intake according to nutritional requirements in patients with cirrhosis should be 35-40 kcal/kg/day, and the daily protein requirement of 1.2 g/kg in the absence of malnutrition or 1.5 g/kg in case of malnutrition. Processed foods, fructose-rich drinks, alcohol consumption should not be included in the diet, respectively, are contraindicated. In patients at risk of hypoglycaemia, such antidiabetics are preferred: metformin, DPP-4 inhibitors; GLP-1 receptor agonists and SGLT-2 inhibitors. Insulin therapy is recommended for patients with decompensated cirrhosis, stage Child-Pugh C. Insulin analogues are preferable because they provide more satisfactory glycaemic control and are associated with a lower risk of hypoglycaemia. The particularity of this case represents the risk of severe, recurrent hypoglycaemia in patients with cirrhosis and diabetes.

**Conclusion.** The treatment of type 2 diabetes mellitus in patients with cirrhosis is challenging due to increased hypoglycemia risk, altered pharmacokinetics of oral antidiabetics, reduced hepatic insulin clearance, and, on the other hand, frequent blood glucose self-monitoring is essential in this category of patients for the prevention of severe hypoglycemic episodes.