A 31-year-old female bodybuilder who was admitted to the Clinic because of deep coma and hypoglycaemia was presented. For last six weeks she had been preparing for a competition doing aerobic and anaerobic exercises, ingesting rich-protein and low-carbohydrate diet and administering a low dose of somatotropine every day. Conclusions: Even for the regional competitions there is a need for exact doping check among young athletes. Growth hormone in a small dosage taken together with low-carbohydrate and rich-protein diet can provoke deep hypoglycemia among people who use it for doping purposes.

Discussion

Substances of abuse are well documented among bodybuilders and weight lifters keen to enhance their performance. Growth hormone (GH) and recombinant human growth hormone (rHGH) are used by bodybuilders due to their anabolic properties [2,3,5].

GH has both diabetogenic and insuline-like actions [4,5,7]. Supraphysiological GH doses are known to reduce insulin sensitivity, but lower doses are less well studied [7]. The described female bodybuilder used subcutaneously a low dose of Norditropin every day. This was about half of the dosage recommended by the manufacturer.

On admission the female was in deep coma (GCS=5 (E1V1M3); IV° Matthew Coma Scale), the blood pressure varied from 110/60 mmHg to 120/80 mm Hg, the heart rate was about 92 beats/min. and the respiratory rate 16/min. Despite the continuous dextrose infusion the blood glucose level was initially 41 mg/dl. Total blood count, coagulogram, arterial blood gas values, electrolytes and serum creatinine were within normal range.

The parents found the patient in her apartment at 6 a.m. The fever of 38.5°C was noted. The pupils were equal and reactive to light. The female was in deep coma and had signs of disorientation. The intravenous infusion of dextrose was discontinued after 24 hours and the patient was discharged from hospital after 48 hours of hospitalisation upon her own request.

After the first hour of treatment the blood glucose level was increased to a normal range after 36 hours. The patient’s diet was protein-rich (350 g/day) and low-carbohydrate (<60 g/day) to achieve hypoglycemia as a consequence of disorientation. The diurnal intra-venous infusion of dextrose was 240 g/day. The patient awoke but was unconscious and the blood glucose level was 173 mg/dl and the patient was discharged from hospital after 48 hours of hospitalisation upon her own request.
described in this report could be additionally caused by low-carbohydrate and rich-protein diet, exhausting exercises and menstrual cycle. According to Fioretti et al., significantly lower levels of GH were found in follicular phase compared to ovulatory period and luteal phase. A slightly higher glucose tolerance was found in follicular phase as well as a reduced hypoglycaemia under insulin load [1].

Conclusions
Even for the regional competitions there is a need for exact doping check among young athletes.

Growth hormone in a small dosage taken together with low-carbohydrate and rich-protein diet can provoke deep hypoglycaemia among people who use it for doping purposes.

References