



Heroin addict with gangrene of the extremities, rhabdomyolysis and severe hyperkalemia

Heroinski zavisnik sa gangrenom ekstremiteta, rabdomiolizom i teškom hiperkalemijom

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Abstract

Introduction. Long-time consumption of narcotics leads to altered mental status of the addict. It is also connected to damages of different organic systems and it often leads to appearance of multiple organ failure. Excessive narcotics consumption or abuse in a long time period can lead to various consequences, such as atraumatic rhabdomyolysis, acute renal failure and electrolytic disorders. Rhabdomyolysis is characterized by injury of skeletal muscle with subsequent release of intracellular contents, such as myoglobin, potassium and creatine phosphokinase. In heroin addicts, rhabdomyolysis is a consequence of the development of a compartment syndrome due to immobilization of patients in the state of unconsciousness and prolonged compression of extremities, direct heroin toxicity or extremities ischemia caused by intraluminal occlusion of blood vessels after intraarterial injection of heroin. Severe hyperkalemia and the development of acute renal failure require urgent therapeutic measures, which imply the application of either conventional treatment or a form of dialysis.

Case report. We presented a male patient, aged 50, hospitalized in the Emergency Center Kragujevac due to altered mental status (Glasgow Coma Score 11), partial respiratory insufficiency (pO_2 7.5 kPa, pCO_2 4.3 kPa, SpO_2 89 %), weakness of lower extremities and atypical electrocardiographic changes. Laboratory analyses, carried out immediately after the patient's admission to the Emergency Center, registered the following disturbances: high hyperkalemia level (K^+ 9.9 mmol/L), increased levels of urea (30.1 mmol/L), creatinine (400 μ mol/L), creatine phosphokinase – CK (120350 IU/L), CK-MB (2500 IU/L) and myoglobin (57000 μ g/L), with normal levels of troponin I (< 0.01 μ g/L), as well as signs of anemia (Hgb 92 g/L, Er 3.61×10^{12} /L), infection (C-reactive

proteine 184 μ g/mL, Le 16.1×10^9 /L) and acidosis (base excess – 18.4 mmol/L, pH 7.26. Initial examination of the patient revealed swelling and paleness of the right lower leg, signs of gangrene of the right foot and the 1st and the 4th toes of the left foot. The patient had normal values of arterial pressure (130/80 mmHg) and heart rate (64/min⁻¹); roentgenographic lungs examination and computerized tomography (CT) brain examination did not reveal pathological changes in lung and brain parenchyma; toxicological analyses confirmed the presence of heroin in patient's organism. The patient was treated by intensive conventional treatment (infusion of crystalloid solutions, 8.4% solution of sodium bicarbonate, *iv* infusion of diuretics, calcium gluconate and short-acting insulin), and also by antibiotics and anticoagulants. Normalization of kalemia and fast regression of electrocardiographic changes were registered. The patient refused the suggested surgical treatment (fasciotomy, foot amputation). After stabilization of kidney function and improvement of his mental state, the patient agreed to undergo surgical procedure. Therefore, on the day 30 of hospitalization the above-knee amputation of the right leg was performed, and on the day 38 the transmetatarsal amputation of the left foot was carried out. After 46 days of hospital treatment, the patient was released and sent to home treatment. **Conclusion.** The routine laboratory diagnostics, which implies determining of the levels of potassium, urea, creatinine and CK in the serum of all hospitalized heroin addicts can contribute to timely detection of hyperkalemia and acute kidney weakness and undertaking of appropriate therapeutic measures.

Key words:

heroin; overdose; rhabdomyolysis; hyperkalemia; gangrene; foot; diagnosis; differential.

