

Rhabdomyolysis and Its Relationship with Paraclinical Variables in Poisoned Patients

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Introduction. One of the consequences of poisoning is rhabdomyolysis, a clinical syndrome that occurs due to the damage to striated muscles, myocytes, muscular fibers, and the release of intercellular elements into the bloodstream. Mechanisms causing this syndrome consist of damage to the cell wall, cellular hypoxia, and disorders in the sodium-potassium pump of muscle cells. This syndrome is caused by various factors, including the consumption of some medicines and poisons, surgery, trauma, malignant hyperthermia, muscular ischemia, high muscular stresses, impacting physical factors, viral and bacterial infections, metabolic and electrolyte disorders, endocrine disorders, genetic disorders, and neuropathies. This study examined rhabdomyolysis in all types of poisoned hospitalized patients and its relationship with paraclinical variables, such as creatine phosphokinase and the patients' level of creatinine, blood urea, alanine aminotransferase, and aspartate aminotransferase.

Methods. In this retrospective cross-sectional study, the researchers reviewed the records of all the patients hospitalized for poisoning during one year and identified cases of rhabdomyolysis by referring to patients' records in a referral center in the northwest of Iran. More than 100 patients suffering from rhabdomyolysis caused by poisoning were enrolled.

Results. In this study, the frequency of AKI ranged from 10.9 to over 16.9 percent: at discharge (or death) (10.9%), during hospitalization (16.9%), and arrival time (16.9%). There was a significantly positive correlation between age and Cr; i.e., by aging, only Cr levels also increased at arrival time (Pearson's correlation: +0.248, $P = 0.024$). There was a significantly positive correlation between CPK and Cr, i.e., with an increase in CPK level, Cr levels increased, too, and with a decrease in CPK levels, Cr levels decreased, too (Table 3). In CPK levels > 2000, the risk of AKI ($Cr > 1.5$) increased 2.33 folds.

Conclusion. Xenobiotics (e.g., opioids, drugs, alcohol, and poisons), xenobiotic-induced coma, and/or xenobiotic-induced seizures were the causes of rhabdomyolysis in the present study. Briefly, the research findings revealed the highest prevalence of rhabdomyolysis in male youth poisoned by narcotics. This research indicates drug misuse of youth as active labor forces and subsequently one of the severe social crises that the authorities should monitor and control. Typical clinical symptoms and rhabdomyolysis symptoms do not occur at the same time. Hence, proper clinical workouts and timely para-clinical tests play a significant role in the initial diagnosis and timely treatment to avoid ARF.