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This paper will discuss the following case study: A 27-year-old patient with a history of substance abuse is found unresponsive by emergency medical services (EMS) after being called by the patient's roommate. The roommate states that he does not know how long the patient had been lying there. Patient received naloxone in the field and has become responsive. He complains of burning pain over his left hip and forearm. Evaluation in the ED revealed a large amount of necrotic tissue over the greater trochanter as well as the forearm. EKG demonstrated prolonged PR interval and peaked T waves. Serum potassium level 6.9 mEq/L. This paper will explain why the patient presented the symptoms described, identify the genes that may be associated with the development of the disease, and explain the process of immunosuppression and its effect on body systems.

Why the patient is presenting with the specific symptoms described.

The patient was unresponsive due to opiate overdose. Patient received naloxone in the field and became responsive. Naloxone is an opioid antagonist used to reverse the effect of opioid overdoses. Opioids slow breathing and an overdose may cause respiratory depression. The respiratory center is depressed, and the rate of breathing decreases gradually until respiratory failure occurs (McCane & Huether, 2019). The large amount of necrosis over the greater trochanter left hip and forearm may likely due to physical from the fall when the patient loses consciousness (Haikin, Herzberger, Aviner, & Cherniavsky, 2012). Necrosis means Cellular death due to a lack of blood and oxygen to the tissue. It may be triggered by chemicals, cold, trauma, radiation or chronic conditions that impair blood flow (Whitlock, J., 2020). The patient may also have developed Rhabdomyolysis triggered by muscle injury as result of the fall. EKG demonstrated prolonged PR interval and peaked T waves. Serum potassium level 6.9 mEq/L: High level of potassium caused the prolonged PR interval and peaked T waves (Weiss, Qu, &

Shivkumar, K. (2017. Elevated levels of, creatine kinase, myoglobin in blood and urine, potassium, and creatinine in blood and urine, are signs of muscle damage.

Identify the genes that may be associated with the development of the disease.

Genetic and environmental variables contribute to addictive agents' use and addiction.

Addictions are moderate to highly heritable. An Individual's risk of substance abuse is proportional to the degree of genetic relationship to an addicted relative (McCane & Huether, 2019). Addiction vulnerability involves a lot of very complex factors that include both genes and life experience. The study of one gene in particular, the D2 subtype, is one of the most studied cases of genetic vulnerabilities. When a person takes drugs or alcohol, the brain is artificially stimulated to produce dopamine, a neurotransmitter that is responsible for feelings of pleasure and reward in the brain. The D2 subtype responds to the presence of dopamine, so people who do not have this gene have a stronger compulsion for alcohol and will consume alcohol in larger amount when compared to other individuals who do have the gene. This is because people who lack the D2 gene do not feel the effects of dopamine as much as people who have the gene, so they often drink longer and harder to achieve the same buzz

Explain the process of immunosuppression and the effect it has on body systems.

Immunosuppression is a reduction of the activation or efficacy of the immune system. Some portions of the immune system itself have immunosuppressive effects on other parts of the immune system, and immunosuppression may occur as an adverse reaction to treatment of other conditions. Long-term use and addiction to drugs can lead to considerable damage to many systems in the body, especially the immune system. The immune system may be harmed directly by intoxicating substances, or the way the drug is ingested may contribute to a higher risk of infection such as intravenous drug user. Drug user can develop serious problems, such as cognitive

problems, heart disease, lung disease, or liver failure, harm to the immune system that can lead to incurable disease infections and death.