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Licorice Consumption causing Hypokalemia and Lethal Dysrhythmias

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Introduction
This report describes a case in which licorice root consumption can cause hypokalemia, which can lead to serious cardiac dysrhythmias.

Presentation of Case
The patient was a 54-year-old female of Middle Eastern descent who presented to the emergency department via ambulance with complaints of severe generalized weakness and hypokalemia.

The patient's initial presentation revealed an altered mental status and hypokalemia with a plasma potassium (K) of 1.6 mmol/L, and metabolic alkalosis of 6.0 mmol/L. The patient's creatinine kinase (CK) was moderately elevated at 1200 IU/L, with a negative CKMB and troponin. All other labs were unremarkable. The patient was administered IV potassium and admitted to the cardiac intensive care unit (ICU) for further evaluation.

Upon further investigation with the patient's family, it was discovered that the patient had been consuming large quantities of herbal tea made from licorice root that a family member had obtained from their native country. The patient's strong history of drug abuse was also noted.

The patient was treated with IV potassium and admitted to the cardiac intensive care unit (ICU) for further evaluation.

Signs and symptoms
Excessive licorice consumption can result in symptoms such as fatigue, muscle weakness, and hypokalemia.

Lethal EKG changes due to hypokalemia
The underlying pathophysiology lies in the mineralocorticoid effect of licorice. Glycyrrhizinic acid causes sodium retention through a cascade of chemical responses in the kidney and adrenal cortex. The adrenal cortex makes two types of steroids, mineralocorticoids and glucocorticoids, which can cause sodium retention.

Underlying Pathophysiology and Significance
The purpose of this report is to describe a case in which licorice consumption caused hypokalemia and a lethal dysrhythmia.

In conclusion, hypokalemia producing life-threatening results due to licorice root consumption is a rare emergency presentation. However, when hypokalemia exists without other explorable causes one must think of ingestion. The importance of a detailed history is an important element in the findings but not always immediately accessible in an emergent situation therefore emergency medicine often treats the symptoms first then looks for underlying causes.

Implications for Nursing Care
Implications for nursing care consist of a detailed patient history, complete physical assessment, interpretation of potential consequences of critical lab values and close observation.

References

Additional Sources


Conclusion
In conclusion, hypokalemia producing life-threatening results due to licorice root consumption is a rare emergency presentation. However, when hypokalemia exists without other explorable causes one must think of ingestion. The importance of a detailed history is an important element in the findings but not always immediately accessible in an emergent situation therefore emergency medicine often treats the symptoms first then looks for underlying causes.