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Licorice Consumption causing Hypokalemia and Lethal Dysrhythmias

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Introduction
This report describes a case in which approximately a two-month exposure of licorice root tea consumption containing glycyrrhizinic acid (GA) produced generalized weakness, secondary hypertension, hypokalemia and hypokalemia, leading to a near-dysthymia of ventricular fibrillation.

Although licorice root has been used for medicinal purposes dating back centuries, the potential toxic side effects can be life threatening without early recognition. Most licorice containing GA is common in many Middle Eastern, Far Eastern and European countries.

The purpose of this report is two-fold: first, to describe the pathophysiological effects of GA that result in severe hypokalemia, leading to a near-dysthymia of ventricular fibrillation.

This report describes a case in which a 54-year-old female of Middle Eastern descent presented to the emergency department via ambulance with complaints of severe generalized weakness for about one week. The patient was fully comprehensible with a lack of communication as the patient did not speak or understand any English. Interpreter services were requested at this time.

The patient’s initial presentation revealed an alert and afibrile patient with normal body mass index (BMI) and moderate hypertension of 105/60 mm Hg. Electrocardiogram revealed sinus rhythm with a prolonged QT. Physical exam demonstrated adequate signs of ventilation and perfusion.

The patient’s labs reported severe hypokalemia with a plasma potassium (K+) of 1.6 mmol/L, and metabolic alkalosis with a bicarbonate (HCO3- ) level of 46 mmol/L. The patient’s creatinine (Cr) was moderately elevated at 800 U/L, with negative CKMB and troponin. All other lab results were unremarkable. The patient was administered IV potassium and admitted to the cardiac intensive care unit (CICU) for further evaluation.

Upon further investigation with the patient’s family, it was discovered that the patient had been consuming large quantities of an herbal tea made from licorice root for a family member who had obtained them from their native country. The most likely diagnosis was exogenously-induced apparent mineralocorticoid (AH) syndrome. The patient was administered a detailed history is an important element in the findings but not always immediately available without other explainable 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.

Conclusion

In conclusion, hypokalemia producing life-threatening results due to licorice root consumption is a rare emergency presentation. However, when hypokalemia exist without other explainable 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.