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카페인 과다 복용으로 유발된 저칼륨혈증

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Caffeine Induced Hypokalemia

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Caffeine is one of the most popular drugs, consumed by up to 90% of people in worldwide. Ingestion of massive amounts of caffeine can lead to severe hypokalemia through several pathophysiologic mechanisms. Here, we report a case of caffeine induced hypokalemia. A 29-year-old man was admitted in our hospital to find the cause of recurrent episodes of lower extremity weakness. The symptoms were severe and occurred suddenly. In the three times of prior episodes, hypokalemia 2.6-2.9 mEq/L, low urine osmolality (100-130 mOsm/kgH_2O) was found in his laboratory tests. Urine potassium/urine creatinine ratio was 12 and 16 mEq/gCr, respectively. Transtubular potassium gradient cannot be calculated due to low urine osmolality in all visits. He had no significant past medical history and denied using specific medications including laxatives, diuretics, and herbal remedies. Blood pressure and thyroid function test was maintained in the normal range and there were no other apparent abnormalities on his physical examination. His symptoms were totally resolved after intravenous potassium replacement in all the prior episodes. Through in-depth interview, we found that the patient drinks large amount of caffeine containing beverages; more than 15 cups of coffee daily, soda and various kinds of tea. After stopping coffee ingestion, serum potassium was normalized and symptoms resolved quickly. Taking an excess amount of caffeine is able to cause hypokalemia. Although the detailed mechanism has not been clarified yet, increased intracellular shift of potassium, and an increased loss of potassium via the urine stream caused by the diuretic action of caffeine is suggested. Ingestion of large amount caffeinated beverages should be considered as differential diagnosis for hypokalemia.

Key Words: 커피, 카페인, 저칼륨혈증
Coffee, Caffeine, Hypokalemia