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TITLE PAGE

Title

Ventricular fibrillation following pseudo-Bartter syndrome

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To the Editor:

Hypokalemia is one of the risk factors for cardiac arrhythmia and conduction abnormalities such as ventricular fibrillation (VF) ¹. Although pseudo-Bartter syndrome can induce severe hypokalemia ^{2,3}, no previous report has described fatal arrhythmia following this syndrome. We describe the first case of a patient with pseudo-Bartter syndrome presenting with ventricular fibrillation following hypokalemia.

A 37-year-old woman, who was ambulatory, had been treated for pseudo-Bartter syndrome for several years. Frequent vomiting was the main cause of her symptoms of pseudo-Bartter syndrome. Although the reason of frequent vomiting had been suspected anorexia nervosa, it had been unclear. In April of 1999, the patient visited the outpatient department complaining of severe fatigue. Laboratory investigation showed more severe electrolyte abnormalities than those evident on her last visit (Table). The patient suddenly collapsed at the outpatient department. Cardiopulmonary resuscitation was immediately started. Electrocardiogram showed ventricular fibrillation. The patient was successfully defibrillated with the second direct current shock. After correction of the electrolyte abnormalities, the patient became hemodynamically stable. On the next day, she was almost fully conscious. Several weeks after this attack, the patient was discharged from our hospital

in good condition.

Pseudo-Bartter syndrome is induced under various conditions, such as diuretic abuse, chronic diarrhea, or frequent vomiting. Although the development of severe electrolyte abnormalities is symptomatic of pseudo-Bartter syndrome ^{2,3}, life-threatening arrhythmias following the syndrome have not been reported in the English literature. It is well recognized that hypokalemia can increase incidence of ventricular fibrillation and other ventricular arrhythmias ¹. In this case, we could found severe electrolyte abnormalities indicative of hypokalemia, hypophosphatemia, and hypochloremia, but no other abnormal data could be detected. These electrolyte abnormalities, especially hypokalemia, disturbed cardiac conduction and resulted in ventricular fibrillation. Our case indicates the importance of early detection and correction of severe electrolyte abnormalities following diagnosis of pseudo-Bartter syndrome before the occurrence of serious complications such as ventricular fibrillation.

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	last data	内科外来	外来ホール			生化	normal
		11:42	13:12	13:30	13:45	13:12	
Na	139	131	125	120	125	129	135-145
K	2.8	2.1	3.9	2.27	2.15	3.3	3.6-5.0
Cl	103	78				82	97-107
Ca	9.1	9	1.07	1.15	1.18	8.2	
P	3.3	1.1				3.8	2.2-4.1
Mg						3.3	2.0-2.6
pH			7.392	7.458	7.359		
BE			-1.3	2.3	1.5		

	Last Data Befor CPA		normal range
Na (mmol/L)	139	131	135-145
K (mmol/L)	2.8	2.1	3.6-5.0
Cl (mmol/L)	103	78	97-107
Ca (mmol/L)	2.28	2.25	2.20-2.50
P (mmol/L)	1.07	0.36	0.80-1.60

Table Changes of the patient's electrolytes

Electrolyte (normal range)	Last Data	Before VF
Na (135–145 mmol·l ⁻¹)	139	131
K (3.6–5.0 mmol·l ⁻¹)	2.8	2.1
Cl (97–107 mmol·l ⁻¹)	103	78
Ca (2.2–2.5 mmol·l ⁻¹)	2.28	2.25
P (0.8–1.6 mmol·l ⁻¹)	1.07	0.36