

A hypothermic case with giant Osborn waves and atrial fibrillation after using synthetic cannabinoid

Hypothermia is a condition wherein the body temperature drops below 35°C when an individual is unconscious. In prolonged moderate hypothermia (28–32°C), progressive drops in the pulse rate and increases in atrial and ventricular arrhythmia and Osborn waves are observed in electrocardiography (ECG). Unconsciously, staying outside for an extended time in extreme cold is the most important cause of hypothermia. In recent years, a significant social problem is the increase in the number of people using synthetic cannabinoids (SC) in public places. A frequent result of SC use is severe deterioration in consciousness and perception.

A 22-year-old male patient, who was found unconscious in a park and was brought to the emergency department by 112 emergency services, was reported to have used SC. During vital sign examination, body temperature was too low to be measured, SpO₂ level was 93%, and the other parameters were normal. There was no obvious sign of injury on his body. The initial assessment led us to believe that the patient was in a hypothermic condition because of unconsciousness after drug use and exposure to cold. Atrial fibrillation and giant Osborn waves were observed in his ECG (Fig.1, 2). Four hours later, the body temperature increased to 35.7°C. ECG performed for control revealed that Osborn waves disappeared, and the rhythm returned to a normal sinus rhythm (Fig. 3). Although there was no thermometer that measures body temperature below 35°C in our department, typical Osborn waves observed in ECG led us to consider that the body temperature was between 28 and 32°C and to intervene in the patient early.

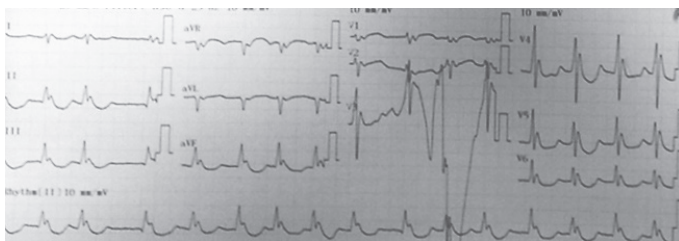


Figure 1. When first admitted, the hypothermic patient's ECG demonstrated Osborn waves and atrial fibrillation



Figure 2. Osborn waves and atrial fibrillation was also observed in the patient's ECG after 2 h of observation (body temperature, 35°C)

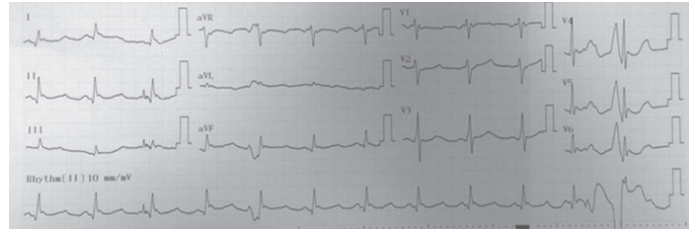


Figure 3. Normal sinus rhythm detected in the patient's ECG after 4 h of observation (body temperature, 35.7°C)

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