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Varying AV Block Induced by Oxcarbazepine

Okskarbazepine Bağlı Gelişen Değişken Tip AV Blok

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Dear Editor,

Oxcarbazepine is an epileptic drug with well-known adverse effects, which was first introduced in 1990 and is now used in many countries worldwide. Oxcarbazepine has been shown to have negative effects on the cardiac conduction system due to its mechanism of action, similar to that of carbamazepine.

A 68-year-old male who had had a diagnosis of epilepsy for 15 years and had been using oxcarbazepine twice a day for a year, was admitted to the emergency service with syncope. Electrocardiography (ECG) showed complete atrioventricular (AV) block (Figure 1A). No abnormality was found in his neurologic and physical examination. The patient was cooperative and oriented. Blood pressure was 110/70 mmHg and heart rate was 40/min. Laboratory findings in blood were normal but the serum concentration of oxcarbazepine could not be measured in the emergency service. The patient was hospitalized in the coronary intensive care unit and a temporary pacemaker was inserted. Echocardiographic findings were normal. Follow-up ECGs showed varying AV blocks (Figure 1A, 1B). The patient was referred to the department of neurology because of oxcarbazepine's effects on the cardiac conduction system. Levetiracetam was initiated and oxcarbazepine was ceased. Rhythm Holter showed 1st degree, 2nd degree (Mobitz type 1 and 2), and 3rd degree AV blocks (Figure 2A, 2B, 2C, 2D). Four days after the drug change, the cardiac rhythm of the patient returned to normal. The pacemaker was removed and the patient was discharged.

Oxcarbazepine is an antiepileptic drug that is also used in the treatment of neuropathic pain and bipolar affective disorder (1). Its chemical structure is similar to carbamazepine and both have similar mechanisms of action (2). Oxcarbazepine shows an antiepileptic effect as carbamazepine does by blocking voltage gated Na+ channels and preventing neuronal membrane depolarization and spread of pathologic neuronal discharge (3). Both drugs with may cause blocks in the cardiac conduction system and previously, Karasu and Baktir (4) reported a patient using oxcarbazepine

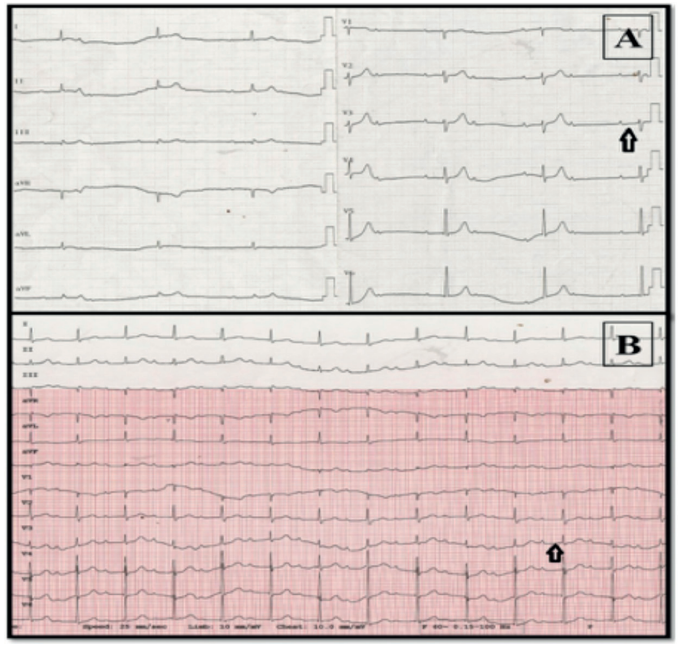

Figure 1. A,B) The electrocardiographs of the patient at admission

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Figure 2. A, B, C, D) The conduction abnormalities seen in Holter electrocardiography

who developed varying AV blocks. Our patient also had complete varying AV blocks. In older patients, in the approach to cardiac conduction system disorders, it is important to question the additional diseases of patients and especially the drugs they are using and to review the rare adverse effects.

Ethics

Informed Consent: Consent form was filled out by all participants.

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