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**Delirium Due to Hypocalcemia**

**Hipokalsemiye bağlı gelişen Deliryum**

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**Özet**

Deliryum, akut başlangıçlı ve değişmiş mental durum ile karakterize bir klinik sendromdur. Deliryum hastaneye yatırılan yaşlıların % 14-56'sında görülür. Bu yazıda, hipokalsemiye bağlı deliryum gelişen 78 yaşında bir kadın olgu sunuldu ve konu güncel literatür bilgileri ile tartışıldı.

**Anahtar Kelimeler:** Acil servis, deliryum, hipokalsemi, geriatri

**Abstract**

Delirium is a neuropsychiatric syndrome characterized by the acute onset and fluctuating course of globally altered mental status. Delirium occurs in 14–56% of elderly hospitalized medical patients. In this case, 78 year-old female in a delirium state due to hypocalcemia discussed by the current literature.

**Keywords:** Emergency department, delirium, hypocalcemia, elderly

## Introduction

Delirium is a neuropsychiatric syndrome characterized by the acute onset and fluctuating course of globally altered mental status. Delirium occurs in 14–56% of elderly hospitalized medical patients (1). The leading cause of delirium include sepsis and metabolic abnormalities (2). Delirium secondary to hypocalcemia usually occurs due to the usage of magnesium sulfate in pregnancy (3,4). In this case, 78 year-old female in a delirium state due to hypocalcemia discussed by the current literature.

## Case Report

78-year-old female patient was brought to our emergency department because of confusion. On neurological examination; there was no orientation and cooperation also no neurological deficit is present. vital signs were as follows: pulse, 68 beats per minute; respiratory rate 22 per minute; blood pressure, 107/54 mm Hg; O<sub>2</sub> saturation 96% in room air; body temperature, 36.5°C. Her Glasgow coma scale was 15. Pupils were 4 mm reactive. Her lungs had equal and good air entry without any pathological sounds. He was with normal heart sounds and a regular rhythm; peripheral pulses were good volume and brisk capillary refill, and no pulse deficit was noted. Other systemic examinations were normal. In psychiatric evaluation patient diagnosed as a delirium according to (Diagnostic and Statistical Manual of Mental Disorders - IV) DSM IV. Chemical studies in the emergency department; Ca: 6.2 mg/dl (Ca: 8.5-10.8 mg/dl) other chemicals were normal. Brain CT scan was normal. Electroencephalography (EEG) were

normal. State of delirium in patients who were thought to be caused by hypocalcemia. Patient treated for hypocalcemia. Six hours after treatment showed improvement in the patient's delirium state. Control chemical studies were Ca: 7.5 mg/dl. The patient was hospitalized. After hospitalization chemical studies were PTH: 15 pg/ml [10-65 pg/ml], Ca: 8.7 mg/dl.

## Discussion

In emergency department, all of the patients with delirium should be evaluated for metabolic disorder. The etiology of delirium in the elderly metabolic abnormalities are in second place after sepsis. The prevalence of delirium in elderly emergency department patients was 9.6% (3). In this series, the rate of delirium was 18.5% in emergency admissions, similar to Kishi's series (16%) (6), but emergency admission was not considered a factor for delirium. Although delirium can be experienced in all age groups, it has an increased frequency at more advanced ages. Risk factors determined for the syndrome include: age, imbalance of electrolyte, hypotension, hyperglycemia, azotemia, fever/hypothermia and infections, use of multiple drugs and withdrawal of alcohol, male sex, severe diseases such as cancer, cerebrovascular or cardiopulmonary disease, malnutrition and burn, patients who have been operated on and kept in ICUs, and psychosocial environment (6). In electrolyte hyponatremia is often (37%), hypoglycemia (35%), hyperglycemia (13%), and hypernatremia (11%) are situations. Hypocalcemia is a rare anomaly that most of these cases (2%) (2).

As risk factors, in our case patient was elderly, multiple drug user,

cardiopulmonary disease, imbalance of electrolyte as hypocalcemia. It is essential that treatment of underlying cause in delirium . After treatment of hypocalcemia our patient delirium state improved. Delirium is usually multifactorial and a fair number of elderly patients develop delirium. Most of the causes were treatable and had a favorable outcome (83%) (2).

As a conclusion, metabolic disturbances are the leading cause of delirium in geriatric patients. However, hypocalcemia as a rare cause of delirium should be regarded beside the common causes such as hypoglycemia and hyponatremia.

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