

# Dialysis headache: A case report

Fidan Incekara\*, Suleyman Kutluhan\*, Murat Demir\*\*, Tugrul Sezer\*\*

\*Department of Neurology Medical School Suleyman Demirel University, Isparta/Turkey

\*\*Department of Nephrology Medical School Suleyman Demirel University, Isparta/Turkey

## Özet

### Diyaliz başağrısı:bir olgu sunumu

Hemodiyaliz sırasında karşılaşılan nörolojik semptomlardan bir tanesi de başağrısıdır. Diyaliz büyük miktarlarda su ve elektrolitin yer değiştirmesi sebebiyle şiddetli başağrılarına neden olabilir. Burada hemodiyaliz seansları sırasında başağrısı gelişen ve hemodiyaliz parametrelerinin değiştirilmesiyle başağrısı önlenen olgu sunulmaktadır.

**Anahtar kelimeler:** Başağrısı; hemodiyaliz

## Abstract

One of the common neurological symptoms during hemodialysis is headache. Dialysis may cause severe headache because of fluid and electrolyte disturbance. A patient who shows the emergence of headache during the hemodialysis sessions and prevented by changing the parameters or methods in dialysis is presented here.

**Key words:** Headache; hemodialysis

## Introduction

Hemodialysis increases the expected lifetime of the patients with end-stage renal disease. It prevents from the development of uremia related complications including neuropathy and encephalopathy. Moreover, there are many different acute (agitation, delirium, cramps, convulsion, headache, irritability, myoclonus) and chronic (Wernicke Encephalopathy, dialysis demans, amyloid neuropathy, subdural hematoma) complications associated with hemodialysis (1,2). One of the common neurological symptoms during hemodialysis is headache. Dialysis may cause severe headache because of fluid and electrolyte disbalance (3). According to "International Headache Society" criteria, dialysis headache is characterized by occurring during hemodialysis, disappearing within 72 hours after dialysis, emerging at least half of the hemodialysis sessions and by at least three attacks with these properties (4,5).

A case with headache occurred during hemodialysis session is reported here.

## Case

A 41-year-old age man with hypertension, diabetes mellitus and chronic renal failure related to diabetic nephropathy has been dialyzed for three months. He described a headache occurring at the last hour of each hemodialysis session for last three sessions. He feels the headache in the generalized area of his head and also described it as throbbing and affecting both of the eyes, but without nausea and photophobia. The headache lasted about 24 hours after hemodialysis. He had no headache history before dialysis treatment. Neurological examination was normal except diabetic polyneuropathy. He has had vision loss related to diabetic - hypertensive retinopathy for one year. Computerized tomography was normal. The case was diagnosed as dialysis headache considering the medical history, neurological examination and laboratory findings. Patient's headache disappeared in the following hemodialysis sessions due to decreasing dialysis blood flow rate and increasing dialysis duration.

## Discussion

Although, headache is one of most common neurological symptoms, the number of studies related to clinic properties of this situation is limited (3,6,7). The frequency of headache occurring during

**Yazışma Adresi:** Dr. Fidan Incekara  
Süleyman Demirel Üniversitesi, Tıp Fakültesi Nöroloji Anabilim  
Dalı, Isparta  
Tel:0 246 2112525  
E-mail:drfidan@gmail.com

hemodialysis is reported as 57.5%-70% (3, 4). Antoniazzi et al. (7) defined 27.6% of the headache emergencies during hemodialysis as dialysis headache and Goksan et al. (3) defined that as 48%. Antoniazzi et al. was determined that the incidence of headache is high between third and fourth hours of a dialysis session (7). In another study (8), it was reported that headache prevalence increases with the duration of dialysis session. In our case, the patient's headache was starting at the last 1-1.5 hour of each 4 hour hemodialysis sessions. His headache was generalized area of his head and he also described it as throbbing and affecting both of the eyes. As in the 23% of the cases Goksan et al. described, his headache was characterized by diffusing and felt in all over the head (3).

The pathogenesis of dialysis headache is unknown. However, one possibility is the presence of hypertension during haemodialysis. Bana et al. (6) reported a positive correlation between the severity of hypertension and the likelihood of headache to occur during haemodialysis even though the absence of hypertension does not necessarily preclude the occurrence of headache during dialysis. The headaches described in hemodialysis-patients may represent an integral part of the so-called 'post-dialysis dysequilibrium syndrome' (3,9). However, dialysis disequilibrium syndrome was not diagnosed in our patient. Long dialysis duration, an effective dialysis and higher ultrafiltration rate significantly enhance the incidence of headache during dialysis (10-13). Headache could be developed in effectively dialyzed patients. In this setting, initially altering the dialysis prescription in favor of less intensive and more frequent treatments may avoid this complication. The reason for our patient's headache was effective hemodialysis since the headache disappeared when the blood circulation was slowed down and the duration of dialysis time was increased. Headache which emerges during the hemodialysis sessions causes discomfort for the patient. If the headache is determined as because of the hemodialysis; it can be prevented by changing the dialysis parameters.

## References

1. Raskin NH. Neurological complications of renal failure. In: Aminoff MJ, editor. Neurology and general medicine, 3rd edn. Philadelphia, PA: Churchill Livingstone, 2001;293-306
2. Leonard C.D, Well E, Scribner B.H : Subdural haematomas in patients undergoing haemodialysis, Lancet 1969;2:239-40.
3. Göksan B, Karaali-Savrun F, Ertan S, Savrun M. Haemodialysis-related headache. Cephalalgia 2004;24:284-87
4. Antoniazzi AL, Bigal ME, Bordini CA, Speciali JG. Headache associated with dialysis: the International Headache Society criteria revisited. Cephalalgia 2003;23:146-49
5. Headache Classification Subcommittee of the International Headache Society. The international classification of headache disorders. Cephalalgia. 2004;24(suppl 1):1-160.
6. Bana DS, Yap AU, Graham JR. Headache during hemodialysis. Headache 1972;112:1-14
7. Antoniazzi AL, Bigal ME, Bordini CA, Teper SJ, Speciali JG. Headache and hemodialysis: a prospective study. Headache 2003 ;43:99-102
8. Brunet P, Saingra Y, Leonetti F, et al. Tolerance of hemodialysis: a randomized cross-over trial of 5-h versus 4-h treatment time. Nephrol Dial Transplant. 1996;11(Suppl 8):46-51
9. Arieff IA. Dialysis disequilibrium syndrome.current concepts on pathogenesis and prevention. Kidney Int 1994;45:629-35
10. Dumler, F, Stalla, K, Mohini, R, et al. Clinical experience with short-time hemodialysis. Am J Kidney Dis 1992;19:49-56.
11. Skroeder, NR, Jacobson, SH, Lins, LE, Kjellstrand, CM. Biocompatibility of dialysis membranes is of no importance for objective or subjective symptoms during or after hemodialysis. ASAIO Trans 1990;36:637-39
12. Collins, DM, Lambert, MB, Tannenbaum, JS, et al. Tolerance of hemodialysis: A randomized prospective trial of high-flux versus conventional high-efficiency hemodialysis. J Am Soc Nephrol 1993;4:148-154.
13. Skroeder, NR, Jacobson, SH, Lins, LE, Kjellstrand, CM. Acute symptoms during and between hemodialysis: The relative role of speed, duration, and biocompatibility. Artif Organs 1994;18:880-87.