

Recovery of vision after treatment of hemodialysis related bilateral optic nerve ischemia

Debbie Nomiko*

Department of Nursing, University of Health Ministry, Jambi, Indonesia

Accepted on 15th November, 2021

Description

Hypotension is the most frequent complication of hemodialysis, being in 10–50 of the sessions and it's a significant cause of morbidity and mortality in this group of cases. There are some mechanisms described, the most important is due to a rapid-fire reduction in blood volume during the ultrafiltration. To our knowledge, in the literature, since 1986 lower than 30 cases of nonarteritic anterior ischemic optical neuropathy as a result of dialysis convinced hypotension had been described [1]. The visual consequences are still inadequately recognized. We report this case to draw attention to the visual complaints potentially unrecoverable in this threat group. Cases with habitual order complaint frequently also present with anemia and hypertension, conferring lesser vulnerability to ischemic lesions in the optical discs. NAAION started by hypotension is described in literature and it's allowed that nightly hypotension is the medium behind the high number of NAAION cases during the sleep period. Considering that the immunological and serological study was negative and adding to the known threat factors for NAAION the relative hypotension during de dialysis session that coincided with visual complaints leads us to explosively consider the thesis of NAAION convinced by dialysis hypotension.

Optical Changes during Hemodialysis

The negative impact of CKD on the case's eye is complex and different. Studies have shown that HD, as a relief and treatment of CKD, can ameliorate certain optical symptoms in ESRD cases. It has been reported that stylish corrected visual perceptivity improves after a single HD session, and cases with diabetes tend to have further egregious advancements. Other experimenters have reported that HD can relieve macular edema in cases with order failure caused by diabetes. Still, in utmost cases, the negative impact of hemodialysis on the eye in CKD cases seems to be far beyond its positive impact. Plant aggravation of dry eye pattern after a single session of HD. Also, it has been observed since the early sixties that HD can change the position of intraocular pressure. Different studies have shown IOP to increase drop or remain unchanged. The goods of HD on the posterior pole include changes in retinal consistence, retinal whim-whams fiber subcase consistence, and choroid consistence [2]. Significant differences in these parameters have been reported in some studies, although others hold different views. The hemodialysis group was divided into primary order complaint, hypertensive KD and diabetic KD groups rigorously according to the original etiology of renal insufficiency [3]. When cases failed to give dependable supporting accoutrements or when two or further etiologies were

suspected, the cases were included in the etiology unknown group. Nineteen healthy people without HD history were set as normal control [4].

Hemodialysis System

Only morning session HD cases were included. All cases passed 4 h HD sessions 3 days per week, at a blood inflow rate of 250 ml/ min. Cases were treated using high performance dialyzers 4008S type fresenius HD machine and a Campbell 8L applicable dialyzer patient blood was dialyzed against bicarbonate dialysate [5]. All cases displayed arteriovenous fistulae and used a polysulfide concave fiber dialyzer. The total body weight was measured before and after HD.

References

1. N. Jindal and M. Misra, "Eyeing the complications of hemodialysis in the eye," *Hemodialysis International*, vol. 18, pp. S48–S51, 2014.
2. S. Basu, T. Das, and T. R. Padhi, "Serous retinal detachment and multiple retinal pigment epithelial detachments, following hemodialysis for multi-organ failure," *Indian Journal of Ophthalmology*, vol. 58, no. 3, pp. 261–262, 2010.
3. R. D. Evans and M. Rosner, "Fellows' forum: Ocular abnormalities associated with advanced kidney disease and hemodialysis," *Seminars in Dialysis*, vol. 18, no. 3, pp. 252–257, 2005.
4. A. A. El-Sanhouri, R. E. Foster, M. R. Petersen et al., "Retinal tears after posterior vitreous detachment and vitreous hemorrhage in patients on systemic anticoagulants," *Eye*, vol. 25, no. 8, pp. 1016–1019, 2011.
5. S. J. Yang, Y. H. Han, G. I. Song, C. H. Lee, and S. W. Sohn, "Changes of choroidal thickness, intraocular pressure and other optical coherence tomographic parameters after haemodialysis," *Clinical and Experimental Optometry*, vol. 96, no. 5, pp. 494–499, 2013.

*Correspondence to:

Debbie Nomiko

Department of Nursing

University of Health Ministry

Jambi

Indonesia

E-mail: Debbie972@yahoo.com