

# Hyperaldosteronism and Increased IL-6 as Cardiovascular Risk Factors in Haemodialysis Patients and Kidney Transplant Recipients

**Author:** \*Maria Smaliakova<sup>1</sup>

1. Minsk Scientific and Practical Center  
for Surgery, Transplantology and  
Hematology, Minsk, Belarus

\*Correspondence to dr.smaliakova@gmail.com

**Disclosure:** The author has declared no conflicts of interest.

**Acknowledgements:** The author is grateful to the team of Minsk Scientific and Practical Center for Surgery, Transplantology, and Hematology.

**Keywords:** Cardiovascular risk, haemodialysis, kidney transplant recipients.

**Citation:** EMJ Nephrol. 2025;13[1]:47-48.  
<https://doi.org/10.33590/emjnephrol/MEEJ8425>

## BACKGROUND

Renal replacement therapy prolongs life in patients with Stage 5 chronic kidney disease. Cardiovascular diseases are the main cause of death in this group of patients. Identifying and correcting cardiovascular risk factors can improve the quality of life, and increase the life expectancy of patients receiving renal replacement therapy. The aim of the study was to assess the blood levels of aldosterone and IL-6 in these patients and assess their association with adverse cardiovascular events.<sup>1,2</sup>

## METHODS

The study included 52 patients with Stage 5 chronic kidney disease receiving dialysis. In which, 46.2% (n=24) were men, and the average age was 54.6±5.2 years. Fifty percentage (n=26) of patients underwent donor kidney transplantation, while the remaining continued haemodialysis treatment 12 hours a week. The study groups were comparable in gender, age, and traditional cardiovascular risk factors (smoking, family history, obesity, hypertension, hyperglycaemia, and hypercholesterolaemia).

## RESULTS

Over 3 years of observation, 44.2% (n=23) of patients had adverse cardiovascular events, such as acute coronary syndrome, acute heart failure, or life-threatening rhythm disturbance. These cardiovascular complications were more common in patients on haemodialysis (57.7%; n=15) compared to kidney transplant recipients (30.8%; n=8),  $p<0.05$ .

Among dialysis patients, those with adverse cardiovascular events more often had episodes of hypotension (40.0%; n=6 versus 9.1%; n=1), increased blood levels of aldosterone (73.3%; n=11 versus 36.6%; n=4), and IL-6 (26.7%; n=4 versus 0.0), all  $p<0.05$ , at the time of inclusion, compared to patients without adverse cardiovascular events.

Conversely, kidney transplant recipients did not have such differences. Six months after kidney transplantation, the aldosterone blood level in recipients (122 [73–240] pg/mL) was lower than the preoperative level (465 [197–1,000] pg/mL;  $p<0.05$ ). The incidence of hyperaldosteronism also decreased from 65.4% (n=17) to 15.4% (n=4),  $p<0.05$ . An elevated IL-6 level was diagnosed in 7.8% (n=2) patients in the preoperative period and in 3.8% (n=1) 6 months after transplantation,  $p>0.05$ .

## CONCLUSION

Based on this study, it was found that the incidence of adverse cardiovascular events in patients receiving renal replacement therapy is high. Patients with adverse cardiovascular events, on haemodialysis, have a higher preceding incidence of hypotension and elevated blood levels of aldosterone and IL-6, compared to patients without these complications. Kidney transplantation has a positive effect on eliminating these cardiovascular risk factors.

---

### References

1. Smaliakova MV et al. Hyperaldosteronemia and increased interleukin-6 as a cardiovascular risk factors in hemodialysis patients and kidney transplant recipients. Abstract 631. ERA Congress, 4-7 June, 2025.
  2. Smaliakova MV et al. Факторы кардиоваскулярного риска в предоперационном и отдаленном послеоперационном периоде у реципиентов трансплантата почки. Оригинальные научные публикации. 2020;4(1): 846-52.
-