

Effect of switching unfractionated heparin to low-molecular-weight heparin on serum potassium in hemodialysis patients.

[Ezzatzadegan Jahromi S](#), [Mahmoodi MS](#), [Behroozi F](#), [Roosbeh J¹](#), [Emamghoreishi F](#).

Abstract

INTRODUCTION:

Unfractionated (UF) heparin is the most common anticoagulant used during hemodialysis. Failure of the kidneys to excrete potassium as well as heparin-induced reduction of aldosterone synthesis put hemodialysis patients at risk of hyperkalemia. It has not yet been clearly known whether hyperkalemia is also induced by low-molecular-weight (LMW) heparins. This study aimed to evaluate the effect of switching UF heparin to LMW heparin enoxaparin, as an anticoagulant during hemodialysis, on serum potassium level in patients on hemodialysis.

MATERIAL AND METHODS:

In two hemodialysis units, 58 patients were randomly assigned into two groups, to receive two different anticoagulation protocols for 3 weeks; one group continued to receive their routine dose of UF heparin, 5000 units, and the other received enoxaparin, 0.5 mg/kg, at the beginning of each hemodialysis session.

RESULTS:

While there was no significant difference between baseline blood measurements of the two groups in terms of kidney function tests and electrolytes, following 3 weeks of the study, the mean serum potassium level decreased from 4.9 ± 0.8 mEq/L to 4.5 ± 0.5 mEq/L in the LMW heparin group ($P = .001$); however, there was no change in the mean serum potassium level in those who continued to receive their usual dose of UF heparin. In a subgroup analysis, diabetic patients in the enoxaparin group did not experience significant reduction in serum potassium levels.

CONCLUSIONS:

Our study revealed the role of LMW heparins as a potential alternative to UF heparins in the hemodialysis patients with hyperkalemia.