The Blood Coagulation-Fibrinolysis System in Arteriovenous Fistulas of Hemodialysis Patients

Y.	Yunus	Erdem
İ.C.	İbrahim C.	Haznedaroğlu

Departments of Nephrology and Haematology, Hacettepe University School of Medicine, Ankara, Turkey

Yunus Erdem, MD, Hacettepe Tıp Fakültesi, Nefroloji Bölümü, TR-06100 Sıhhiye, Ankara (Turkey), Tel. +90 (312) 324 3109, Fax +90 (312) 324 2009

Dear Sir,

We have read with interest the article by Ishii et al. [1] which evaluates the blood coagulation-fibrinolysis system in end-stage renal disease (ESRD) patients receiving chronic hemodialysis. Hemodialysis patients, not uncommonly, might exhibit thrombotic complications, as well as they may present with a bleeding diathesis. We recently published two studies which demonstrate the role of arteriovenous fistulas (AVF) in hemostatic defects observed in ESRD patients on maintenance hemodialysis [2,3]. Changes in vessel wall and/or blood flow in native AVF might augment hemostatic disarrangements, as the vascular endothelium is predominantly involved in the regulation of hemostatic pathways.

The study performed by Ishii et al. [1] was designed to evaluate the state of coagulation and fibrinolysis via collecting blood from punctured AVF of ESRD patients on maintenance hemodialysis. However, the punctured site of the fistula from which blood samples were obtained has not been clearly stated. It is very important to know whether the arterial or the venous site of the AVF was utilized for this aim, according to the results of our studies. We obtained plasma samples for assaying various coagulation and fibrinolysis markers from the venous site of AVF and from contralateral large veins of ESRD patients and from peripheral veins of the control group. Our results revealed a pre-thrombotic state, as shown by activated co-

agulation markers and enhanced fibrinolysis in the systemic circulation of ESRD patients, and the probable contribution of AVF to hemostatic activation, as proven by the statistically different and positively correlated coagulation, fibrinolysis, and fibrinolysis inhibitors in AVF when compared to the levels in the peripheral venous circulation. As a result, investigators dealing with hemostasis in hemodialysis should consider the constructed native AVF that might contribute to hemostatic disarrangement observed in uremic patients, since the vascular endothelium actively participates in hemostasis.

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