LETTERS TO THE EDITOR

Hemodialysis-Associated Thrombocytopenia: A Multifactorial and Idiosyncratic Complication

To the Editor:

De Prada et al.1 reported 5 cases of hemodialysis patients who had persistent thrombocytopenia that resolved after they switched from an electron-beam–sterilized polysulfone membrane to a different polysulfone membrane, either gamma- or electron-beam–sterilized. In this series, thrombocytopenia appears to be related to the type of polysulfone membrane used rather than the sterilization technique, which contrasts with a recent publication by Kiaii et al.2 We wondered whether the authors could identify special characteristics in patients who developed this complication. In agreement with their observations, we add our experience and some unpublished data regarding the potential thrombocytopenic effect of electron-beam–sterilized dialyzers.

Four consecutive monthly pre- and postdialysis platelet count measurements were performed in 2 well-matched sterilization groups of stable hemodialysis patients; 9 using polysulfone electron-beam–sterilized and 9 using polysulfone steam-sterilized dialyzers. There were no significant differences in pre- and postdialysis platelet counts between the 2 groups. Furthermore, no significant differences between pre- and postdialysis platelet counts were found in the electron-beam group. However, 1 of 9 patients showed significant postdialysis thrombocytopenia in 2 of 4 measurements, which meets the criteria adopted by Kiaii et al.2

In conclusion, our data do not support a continuously occurring thrombocytopenic effect in patients dialyzed with electron-beam–sterilized membranes, which means there is an additional influence of undetermined factors, such as idiosyncrasy or subtle differences in membrane properties and manufacturing processes, medications, or intercurrent illnesses. Therefore, our findings together with those of De Prada et al.1 raise questions about the link between electron-beam sterilization and thrombocytopenia and support the notion that hemodialysis-associated thrombocytopenia is a multifactorial and idiosyncratic complication.

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References


In Reply to ‘Hemodialysis-Associated Thrombocytopenia: A Multifactorial and Idiosyncratic Complication’

To the Editor:

I agree with Filippouloos and Vlassopoulos1 that the sterilization technique is not the only factor underlying thrombocytopenia in patients treated with maintenance hemodialysis, as reported by Kiaii et al.2 For the 5 patients in our case series,3 we were not able to identify any characteristics, comorbid conditions, or medications that would increase the risk of thrombocytopenia. Our report combined with the data provided by Filippouloos and Vlassopoulos1 suggests that there must be other factors—perhaps related to the membrane properties and/or the manufacturing process—that contribute to the observed thrombocytopenia, but the cause is not yet clear. Post4 observed an elevated D-dimer level, which could indicate activation of the coagulation cascade. If thrombocytopenia is related to an activation coagulation cascade, this may result in increased thrombosis in dialysis patients, who are already at increased risk of cardiovascular disease and have vascular access issues. Therefore, further research must be done and knowledge regarding membrane properties and manufacturing processes would be of great benefit.

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RESEARCH LETTERS

Effects of Prolonged Immobilization on Sequential Changes in Mineral and Bone Disease Parameters

To the Editor:

Urinary calcium excretion increases secondarily to bone demineralization in resorptive hypercalciuria.1 According to the classic view, the excess of bone-released calcium increases calciuria through high glomerular calcium filtration and low tubular calcium reabsorption due to downregulation of parathyroid hormone (PTH).3 There is uncertainty about the sequence of these changes and the involvement of phosphorus. We investigated this issue during a bed-rest experiment, an aerospace research model system for studying the effects of gravity on bone.5

References