Re: Protective Effect of Heparin and Aspirin Against Vascular Thrombosis in Pediatric Kidney Transplants

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Sir,

We read with great interest the published report from Tehran, Iran, by Esfandiar and coworkers about the protective effect of heparin and aspirin against vascular thrombosis in the pediatric group of kidney transplant recipients.[1] We have a few queries that we would like to be clarified by the authors.

First, as the authors have also mentioned that risk factors for graft loss secondary to a thrombotic event in the graft include a younger donor age, especially when the donor is less than 5 years old.[2] We wonder whether in this study, the control and the study groups were also compared with regards to this factor.

Second, we agree with the authors that the cause for kidney failure and the mode of dialysis before the transplantation, ie, continuous ambulatory peritoneal dialysis, affects the risk of graft thrombosis following a kidney transplant.[3] Although the authors have mentioned that the cause of kidney failure and the dialysis modality have been compared and controlled for between the two groups, this information has not been included in the tables that compare the study groups.

Third, we would like some clarification as to whether thrombophilia screening and tests, such as protein C, protein S, antithrombin III deficiency, factor V Leiden mutation, prothrombin mutation, and mutation in the *MTHFR* gene were done in the recipients from both the control and the study groups when they were assessed for possible kidney transplantation. We would also like to know whether there has been any case of retransplantation included in the study.

Fourth, as you are aware, time elapsed between the transplantation and the graft thrombosis (immediate, early, or late thrombosis) can sometimes help in differentiating the cause for thrombosis in the grafts. It would be very helpful to know the timing of the thrombotic events in the control group (5 patients) and whether the follow-up thrombophilia tests in this group of patients was done before the transplant.

Fifth, it would be helpful to know the immunosuppressant regimen used in the control and the study groups and whether cyclosporine therapy and/or antilymphocyte therapy have been implemented in the patients.

Sixth, on page 142 of the article in the last paragraph, the authors mentioned that "All of the participants in the study group were followed up for 24 months." It is also mentioned later that "All the patients in the study group who were not lost to follow-up survived during the 48 months of follow-up period." We would appreciate it if the authors would clarify whether the follow-up period in the study group was 24 months or 48 months?

Seventh, in the last part of the results section, the authors mentioned that "vascular thrombosis had been documented in 5 patients (7.9%) in the control group, while none of the children in the study group experienced thrombosis (P = .19)." As the authors have accepted the P value of less than .05 to be significant, the P value of .19 should still be considered as a nonsignificant difference. If the reported P value is correct, then the study has not revealed a reduction in kidney allograft thrombosis incidence in children who have received heparin and aspirin after transplantation. This conclusion is different from the conclusion which is currently drawn by the authors. We would appreciate clarification on the conclusions.

We would like to thank the authors for this interesting paper highlighting the importance and the challenging situation of thrombosis risk assessment and prevention in pediatric kidney allograft recipients.

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REPLY BY AUTHOR

We appreciate the letter from the Dr Jahromi in response to our article. First, in our study, there were limited cases (n = 5) of kidney transplant recipients aged less than 5 years old. However, the two groups were compared with regards to this factor and no significant difference was observed (P = .25). Second, 39 patients received preemptive transplantation, 43 were on hemodialysis and 5 were on continuous ambulatory peritoneal dialysis before transplantation; comparing the two groups revealed no significant differences with regards to this factor. Third, as you know, thrombophilia screening is not mandatory in all kidney transplants. Since our control group was historical, unfortunately they were not studied with regards to this factor. We did not consider any case of retransplantation in our study. Fourth, all graft thrombosis events in the control group were immediate or early. Fifth, after 1991, immunosuppressant regimen included corticosteroid, Mycophenolate mofetil and cyclosporine, whereas before 1991, immunosuppressant regimen included azathioprine instead of Mycophenolate mofetil. Fourteen patients received antilymphocyte therapy. Altogether, there was no significant difference with regards to this factor. Sixth, the follow-up period in the study group was at least 24 months and in the control group, it was maximum up to 170 months. Seventh, according to our calculation of the sample size, it was essential to consider more than 100 cases in the study group. Due to low rate of pediatric kidney transplantation, only 24 cases were considered in our study group. Thus, if this study could be conducted with enough number of pediatric patients, the results might have been significant.

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