



The periodicity of vascular access thrombosis revisited: TIS the season

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Sr. Director:

I would like to congratulate Dr. Gorriz and his colleagues for their excellent work on the increased incidence of hemodialysis vascular access thrombosis (VAT) during the summer months.¹ Their work adds significant insight to this subject. As Dr. Gorriz noted, we also had been interested in this topic more than a decade ago, yet we found no increased incidence of VAT during the summer months.² Indeed although we found no significant differences, the numerically highest rates of VAT were during november and december for the years we studied, 1989-1994 (fig. 1).² Using chaos theory, the only periodicity we found was that VAT was more likely (almost invariably) to occur on a day of dialysis. We could not tell whether such a relationship was due to the procedure itself, or more likely to be a reporting phenomenon that existed since most patients did not notice the asymptomatic thrombosis until they appeared for dialysis and found that their access was unable to be cannulated.

How should we reconcile the disparity of the findings? I doubt that the differences result from the type of access, since similar to Dr. Gorriz, polyflurotetraethylene grafts were predominant among the 947 VAT in our series also. Neither is a climate difference likely since temperatures differences are not very great between Valencia and Opelika. Opelika actually has the higher average temperatures during the summer months (fig. 2). Perhaps the difference is, as Dr. Gorriz suggests, related to a local seasonal custom such as less experienced nursing and technical personnel during the summer months in Valencia. Perhaps the experienced surgeons take more vacation during those months. We had no such seasonal variation in personnel in our study. Finally perhaps the problem is statistical. As Dr. Gorriz correctly notes, both of our

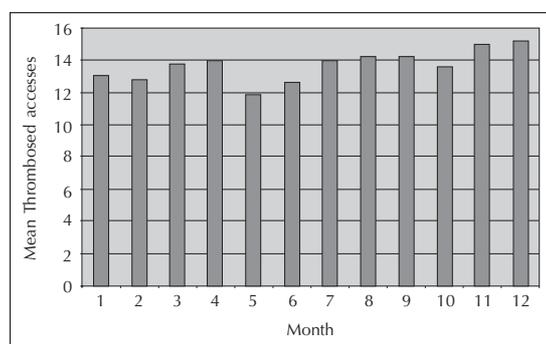


Fig. 1.—Mean vascular access thrombosis rate by month in Opelika, 1989-1993.

studies are observational and fraught with problems. Since neither of us actually measured access survival, neither of us can conclude that access survival was either unchanged or shortened during those months, but merely the observed episodes of VAT were either unchanged or higher. Similarly, since the data is censored (that is, not all accesses thrombosed) perhaps we both should have employed logistic analysis with Kaplan Meyer survival curves. Finally, since in all statistical studies we accept some chance ($p < 0.05$ or $p < 0.01$) of accepting a finding as significant when there is no significance, the more times we perform

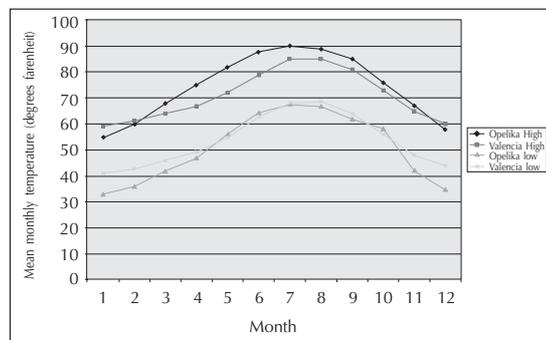


Fig. 2.—Comparison of mean monthly temperatures between Valencia and Opelika.

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the same study the more likely we are to accept an insignificant finding as significant or a significant finding as not significant. At this point, I would agree with Dr. Gorriz, that nephrologists should be alert that there might be a problem and that a full scale prospective study should be performed to find out if indeed there is a relationship.

REFERENCES

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