LETTER TO THE EDITOR

R Wave Increases After Hemodialysis Revisited

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While it has been a quarter of a century since we first reported (and almost 30 years since we collected the data) the increase in R wave amplitude in the EKG after hemodialysis,¹ I continue to be perplexed by the finding and therefore I am truly appreciative of the work of Dr. Madias.² While I certainly can offer no better explanation, I feel

that I must echo the sentiments of Dr. Bernard, "In medicine when we begin to base our opinions on medical tact, on inspiration or a more or less vague sense of intuition on things, we are outside of science and offer an example of fanciful medicine which may involve the greatest of dangers."³ A review of our data would tend to lend doubt to

Table 1. Correlations

			Age	Months on Dialysis	Volume Loss During Dialysis	Potassium Bath	R WAVE
Kendall's tau.b	Age	Correlation coefficient	1.000	0.064	0.114	-0.128	-0.029
		Sig. (2-tailed)	-	0.696	0.493	0.508	0.868
		N	20	20	20	20	20
	Months on dialysis	Correlation coefficient	0.064	1.000	-0.231	0.018	-0.074
		Sig. (2-tailed)	0.696	-	0.161	0.925	0.666
		N	20	20	20	20	20
	Volume loss during dialysis	Correlation coefficient	0.114	-0.231	1.000	0.083	-0.128
		Sig. (2-tailed)	0.493	0.161	-	0.670	0.463
		N	20	20	20	20	20
	Potassium bath	Correlation coefficient	-0.128	0.018	0.083	1.000	-0.394
		Sig. (2-tailed)	0.508	0.925	0.670	-	0.054
		N	20	20	20	20	20
	R wave	Correlation coefficient	-0.029	-0.074	-0.128	-0.394	1.000
		Sig. (2-tailed)	0.868	0.666	0.463	0.054	-
		N	20	20	20	20	20
Spearman's rho	Age	Correlation coefficient	1.000	0.130	0.106	-0.152	-0.044
		Sig. (2-tailed)	-	0.586	0.656	0.522	0.854
		N	20	20	20	20	20
	Months on dialysis	Correlation coefficient	0.130	1.000	-0.321	0.022	-0.103
		Sig. (2-tailed)	0.586	-	0.167	0.928	0.666
		N	20	20	20	20	20
	Volume loss during dialysis	Correlation coefficient	0.106	-0.321	1.000	0.098	-0.198
		Sig. (2-tailed)	0.656	0.167	-	0.682	0.402
		N	20	20	20	20	20
	Potassium bath	Correlation coefficient	-0.152	0.022	0.098	1.000	-0.443
		Sig. (2-tailed)	0.522	0.928	0.682	-	0.051
		N	20	20	20	20	20
	R wave	Correlation coefficient	-0.044	-0.103	-0.198	-0.443	1.000
		Sig. (2-tailed)	0.854	0.666	0.402	0.051	-
		N	20	20	20	20	20

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Figure 1. Normal P-P plot of regression standardized residual.

Dr. Madias' speculation that the R wave increase is due to alleviation of body fluid overload. Since no increase occurred in patients with the greatest fluid loss (patients 8 and 9, in fact there was a decrease in R wave in patient 9 who experienced the greatest fluid loss).¹ Similarly, patient 16 who gains fluid

during his treatment actually develops an R wave increase. In fact, the only significant correlation of R wave increase for our data appears to be with the potassium bath (Table 1, Fig. 1), and while I would not consider myself as astute as Dr. Madias, I am still not totally convinced that the R wave increase is not a manifestation of ischemia since we later found that most of the patients with EKG abnormalities also have thallium defects.⁴ Therefore while I am very excited about Dr. Madias' work in this area, I would urge caution at present to the conclusion that the alleviation of fluid volumes is either totally or partially responsible for changes in amplitude of the QRS complex and I look forward to his further work in this area.

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