

than fortuitous in a 35 year old man with no other explanation for paroxysmal AV block.

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High Risk Patient After Recovery From Myocardial Infarction

Rapaport and Remedios (1) reported the analysis of survival of a series of 139 consecutive patients with acute myocardial infarction who were followed up for 2 weeks to 36 months. Their statistical analysis deserves further consideration. First, univariate analyses were performed with BMDP1L (2); the Mantel statistic was used to test the significance. This procedure and this test (3) are not designed to deal with continuous variables such as age or peak creatine kinase. We should suppose either that groups of patients were constituted using discrete cut-points, or that the univariate test used for these variables was a Cox regression analysis with one variable (4); such analysis may be performed with BMDP2L (5).

Second, the authors stated, they "carried out multivariate analysis with the same variables using stepwise discriminant logistic and multiple linear regression analysis (PIR and P2R)." Discriminant analysis and logistic regression are distinctive procedures (6); furthermore, logistic regression is a nonlinear regression; thus, there is a profusion of at least three multivariate techniques. Unfortunately, no one is appropriate. As stated by Hammermeister et al. (7), "discriminant analysis requires all patients to be followed

for a minimum fixed period of time." This is also true for logistic regression. An appropriate regression to deal with unequal (2 weeks to 36 months) observation times is Cox regression (4-8).

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Reply

Théroux and Moise are correct in stating that BMDP1L is not designed to deal with continuous variables. This program was used for the data shown in Table 1 where cut-points were used for the continuous variables. In addition, this BMDP program was used to describe the difference in the survival curves for two groups of patients; that is, BMDP1L was used for the data shown in Figures 1 and 2.

The initial multivariate analysis of these data was with BMDP2R. This program, although related to discriminant analysis, is certainly not the ideal analysis and no results from this analysis were presented in the paper. Both discriminant analysis (BMDP7M) and logistic regression (BMDPLR not BMDPIR) were used. Initially, BMDP7M was used because BMDPLR was not available. Both programs yielded the same variables as risk factors and the data presented in Tables 2 and 3 were from the logistic regression analysis.

The serious criticism of this letter is that a Cox regression would have been the more appropriate analysis. At the time of the analysis, 70% of the patients had been followed up 6 months or more. This number included the deaths of which 50% (12 of 24 patients) had occurred by this time; 75% of the deaths had occurred by 8 months. Although the patients had not been followed up for a "minimum fixed period of time" it was believed that a sufficient number of patients had been followed up long enough for the logistic regression to be valid.

We have reanalyzed the data for all deaths using a Cox analysis; complex ventricular ectopic rhythm and age were entered as predictor variables. Both of these variables were predictors in the logistic regression. The third predictor variable in the logistic