LETTERS TO THE EDITOR

Is a high hematocrit value an independent risk factor for adverse outcome after coronary artery bypass grafting?

To the Editor:

We read with great interest the recently published article by Spiess and colleagues.¹ In an observational study of 2202 patients undergoing coronary artery bypass grafting (CABG) in 24 different centers, they found on multivariate analysis that the most significant predictor of Q-wave myocardial infarction was a hematocrit greater than 33% on entry to the intensive care unit. They also noted that patients with a hematocrit less than 25% had the lowest rates of both Q-wave myocardial infarction and severe left ventricular dysfunction and concluded that morbidity after CABG might be decreased by allowing the hematocrit to be low immediately postoperatively. These findings have the potential to make an enormous clinical and financial impact given the frequency of this operation world-wide. However, before these results can be accepted as valid, it is essential to know whether any of the patients included in this study had perioperative administration of aprotinin, either as part of a clinical protocol or as part of a concurrent trial. This information is not detailed in the article.

Aprotinin administration has been shown to reduce bleeding and increase postoperative hemoglobin levels after CABG when compared with placebo.^{2,3} Its use has been associated in some studies with increased perioperative myocardial infarction^{4,5} and decreased vein graft patency rates,^{2,5,6} although these findings are not universal.^{3,7} Patients who have been given aprotinin would be expected to have a higher postoperative hematocrit level but may also have been at increased risk of myocardial infarction as a result of an independent effect of aprotinin causing a hypercoagulable state.⁸ Therefore, if any patients in the study reported by Spiess and associates had received aprotinin, the multivariate analysis should be repeated to confirm that a higher hematocrit value was indeed an independent risk factor for Q-wave myocardial infarction and severe left ventricular dysfunction.

A. Graham, FRCS
Hugh O'Kane, FRCS
Cardiac Surgical Unit
The Royal Hospital
Grosvenor Rd
Belfast, BT12 6BA, Northern Ireland

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Reply to the Editor:

My colleagues and I also believe that this article has the potential to change the way that cardiac operations are performed and particularly some of the transfusion habits surrounding those operations.

I wish to clarify the issue of aprotinin and other antifibrinolytic agents. Our study was conducted as an observational study in the very early 1990s, before the present day widespread use of aprotinin and antifibrinolytic drugs. Indeed, we are fortunate that this study was performed before the advent of the almost universal use of one or another of these agents. Our data showed that aprotinin was used in fewer than 10 patients in 2202 studied. Epsilon aminocaproic acid and tranexamic acid were used in fewer than 10% of patients. The data set did not contain detailed information regarding the dosage of lysine analog antifibrinolytic agents nor the exact timing of their use. When we examined this issue very early in the data analysis, we decided that the numbers were too few and the data too sketchy to include in the larger outcome analysis. With fewer than 10 patients receiving aprotinin, no effect could have been proved from the use of that drug. In our analysis we did not examine whether or not a patient received any of the antifibrinolytic agents (yes/no), and prevalence did not differ between outcome groups.