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DISCUSSION

DR RICHARD M. ENGELMAN (Springfield, MA): Doctor Verrier, Dr Reitz, members, and guests. I rise to compliment the authors on their truly aggressive approach to fast-track discharge. You have clearly taken the early discharge philosophy to a new and higher plane.

My four questions are, first, what do you do to moderate the incidence of atrial fibrillation, which is nearly 25% in most people's experience and occurs most frequently on days 2 and 3 or even on day 4?

And second, how do you deal with both pain management and rehabilitation in an outpatient? Do you have any dedicated nursing personnel who take care of the patients once they are discharged?

Third, how do you educate your patients and their families, who may be more important, to anticipate day 1 discharge?

And finally, are you concerned about the medicolegal implications of very early discharge?

DR ALFONSO CHISCANO (San Antonio, TX): I wonder, Doctor, whether you discharge your patients, or do the cardiologists discharge the patients?

Excellent paper.

DR DENNIS L. MODRY (Edmonton, Alberta, Canada): I also rise to congratulate the authors and to parenthetically indicate that we have been using a similar sort of protocol at the University of Alberta for the past few years. In the past 2 years, in roughly 2,400 procedures, 70% of our patients have been discharged by day 4. One of the advantages that we have is a superb province-wide nursing program that looks after this facilitated discharge program that we have in place. While in hospital, though, to get around that one problem, for example, the issue of medicolegal and the issue of arrhythmias, one question we ask before discharge, which is why we cannot really separate ultrafast from fast, is because we simply ask the question; Is there any medical reason why this person should continue being in a hospital? And if it is only an issue of pain control and rehabilitation, they can be home, or they can be in a facility such as we have, say, a rehabilitation facility or something like that, where they may need to go for a few days.

The other advantage that we have is the opportunity for people in rural communities to perhaps move from our center to another center near their homes. And in those smaller centers where there may be a small hospital, the local physician might want to readmit them from time to time. The way we have handled arrhythmias is that even if patients had, on day 3 or day 4, the onset of atrial fibrillation, we will immediately perform cardioversion, initiate Sotacor (Sotalol) therapy, plus or minus digoxin therapy. We will have people come into the emergency room occasionally with new-onset atrial fibrillation, but we do not admit them for that; we will perform cardioversion there, and if they are hemodynamically stable, we will monitor them for a couple of hours and then discharge them.

I just thought I would provide a couple of additional comments to support this concept.

MR STEPHEN WESTABY (Oxford, England): We have a mean discharge time of 4.5 days. We feel that very early extubation allows the patients to move forward rapidly, and our mean extubation time for coronary artery procedures is about 2 hours, and between 3 to 4 hours for valve and double-valve procedures. Could I ask the presenter, and it was a very fine presentation, have you any information about the relationship between extubation time and the time of discharge from hospital? Because we feel that the earlier you extubate the patient, begin feeding, and so on, the quicker you will get them out of hospital.

DR EDWARD D. VERRIER (Seattle, WA): And I may also just ask the question of age. I think the group we have the most difficulty is in the over 75-year-old group.

DR WALJI: I would like to thank the discussants for their comments and kind compliments. Doctor Engelman, I would like to begin by acknowledging the leadership you have provided in this arena, with the papers you have presented after Dr Kay's original presentation in 1990. As I therefore stand here today, I do not wish to appear to be presenting a new breakthrough concept, but maybe a 1998 version of what you and others have developed. In answer to your four questions, I will begin by addressing atrial fibrillation, which continues to plague us all. The overall incidence of new-onset atrial fibrillation in our entire group of coronary artery bypass grafting as well as combined procedures was only 14%. I cannot explain, and therefore cannot take credit for this decreased incidence. I continue to believe that atrial fibrillation is much more multifactorial than we appear to understand. Anecdotally perhaps, I believe that volume status, and specifically hypovolemia, also plays a significant role. This is one more reason for our routine use

of pulmonary artery catheters. The prophylactic use of triiodothyronine and amiodarone has also been described, but we did not use them. For pain management, in addition to the usual narcotic and other analgesics, we often also used Toradol (ketorolac tromethamine) in the intensive care unit and some noninflammatory agents such as ibuprofen on the floors, in the absence of advanced age, diabetes, or renal insufficiency. We did have 1 patient who developed renal failure requiring hemodialysis and another who had upper gastrointestinal bleeding from use of such nonsteroidal agents. So caution in their use is certainly warranted. In terms of education for the patients and their families, we believe that this is important. Many patients in our group, however, coming directly from the catheterization laboratory for emergent operation, did not have such preoperative teaching nevertheless did achieve ultra–fast track discharge. The timing of education perhaps is not as important as the fact that it does occur. Because we deviated from the standard of community care, educating and informing the patients and their families was morally very important for us. The medicolegal implications that you invoke are very real, and we were deeply conscious of them, particularly pertaining to those patients who went home on postoperative day 1.

Doctor Chiscano, the actual discharge order in the chart was written by the cardiologist, but in consultation with the surgeon. I am part of a combined cardiology/cardiac surgery group, and although the postoperative protocols are clearly surgeon driven, the territorial concerns are significantly diminished, and care is provided in a much more integrated fashion.

Doctor Modry, thank you for your comments supportive of this concept. As I previously said, I am sure there are many in the audience, but unknown to us, already practicing protocols similar to ours. However, I would like to point out, if I may, that we have a more purist definition of a hospital discharge, whereby it truly means that a patient leaves a medical (or nursing) facility altogether. Merely transferring the patient to a rehabilitation unit or other institutional facility would therefore not meet this strict criteria in our study.

Mister Westaby, I also wish to thank you for your comments, and in turn recognize your leadership in this area as well. It appears temptingly plausible that extubation times do have an eventual correlation with discharge times, and hence the rationale behind some people advocating intraoperative extubation. We, however, followed our intensive care unit protocol, pertaining to all patients undergoing cardiac procedures operated on by a number of different cardiac surgeons at our hospital. Because the patients in this study stayed in the unit at least overnight anyway, it did not matter that much whether someone underwent extubation 2 or 4 hours after arrival in the unit. I personally prefer a certain initial period of controlled respiratory support while ensuring the absence of postoperative mediastinal bleeding.

Doctor Verrier, your concern about elderly patients is very pertinent, and indeed should be. In our own, perhaps small, study group, however, advanced age itself did not seem to preclude ultra–fast track discharge.