The changing face of acute myocardial infarction

N Danchin

The appointment of new cardiologists and their involvement in emergency care may lead to decreased mortality in patients suffering acute myocardial infarction

Over the past 15 years, clinical researchers have documented the efficacy of both new (or older) medications and percutaneous interventions in patients with acute myocardial infarction. An integrated approach, mixing the use of pharmacologic agents and interventional procedures, has been promoted, with the hope of reducing early (and late) mortality. However, translating recommendations into the “real world” of everyday clinical practice is a difficult exercise and obviously has more chances of success when the educational efforts are, at least initially, directed to a more limited number of physicians, namely, specialists in the target field.

In this regard, the paper by Murphy and colleagues1 provides interesting data by investigating the evolution of early mortality of acute myocardial infarction, 10 years apart (from the late 1980s to the late 1990s), in Scotland, and this in relation to the appointment of new cardiologists involved in emergency care. All acute hospitals in Scotland participated in the study. Overall, median 30 day mortality decreased by an absolute 2.4% (or a 12% relative decrease), a difference highly significant after multivariate adjustment for potential confounders. Importantly, between-hospital variations decreased considerably from the first to the second period (difference between highest and lowest survival: 13.0% in period 1 v 7.6% in period 2). Likewise, nine of 26 hospitals in the 1988–1991 period but only two in the 1998–2001 period had an adjusted risk of death significantly higher than average. These results therefore document the improved, but also more homogeneous, results achieved in the management of patients with acute myocardial infarction in Scotland over a relatively short period of time. As, from period 1 to period 2, at least one cardiologist has been appointed in each Scottish hospital, the authors suggest that both the decrease in mortality and the lower between-hospital variation may be related to the appointment of new cardiologists and their involvement in emergency care.

APPOINTMENT OF NEW CARDIOLOGISTS

Indeed this suggestion seems logical: the appointment of new cardiologists is likely to result in both improved and more rapid diagnosis of cardiac conditions such as myocardial infarc-

TIME DELAY FROM SYMPTOM ONSET

Finally, another major aspect of the management of myocardial infarction is the time delay from symptom onset to delivery of appropriate care, particularly reperfusion therapy. Here again, one would have liked to know whether time to hospital admission (and/or time to first medical contact) had varied in Scotland between the two study periods. In this respect, the French experience is particularly disappointing with, if anything, longer time delays in 2000 periods. In this respect, the French experience is particularly disappointing with, if anything, longer time delays in 2000 periods. In this respect, the French experience is particularly disappointing with, if anything, longer time delays in 2000 periods. In this respect, the French experience is particularly disappointing with, if anything, longer time delays in 2000 periods. In this respect, the French experience is particularly disappointing with, if anything, longer time delays in 2000 periods. In this respect, the French experience is particularly disappointing with, if anything, longer time delays in 2000 periods. In this respect, the French experience is particularly disappointing with, if anything, longer time delays in 2000 periods. In this respect, the French experience is particularly disappointing with, if anything, longer time delays in 2000 periods. In this respect, the French experience is particularly disappointing with, if anything, longer time delays in 2000 periods. In this respect, the French experience is particularly disappointing with, if anything, longer time delays in 2000 periods. In this respect, the French experience is particularly disappointing with, if anything, longer time delays in 2000 periods. In this respect, the French experience is particularly disappointing with, if anything, longer time delays in 2000 periods. In this respect, the French experience is particularly disappointing with, if anything, longer time delays in 2000 periods. In this respect, the French experience is particularly disappointing with, if anything, longer time delays in 2000 periods. In this respect, the French experience is particularly disappointing with, if anything, longer time delays in 2000 periods. In this respect, the French experience is particularly disappointing with, if anything, longer time delays in 2000 periods. In this respect, the French experience is particularly disappointing with, if anything, longer time delays in 2000 periods. In this respect, the French experience is particularly disappointing with, if anything, longer time delays in 2000 periods. In this respect, the French experience is particularly disappointing with, if anything, longer time delays in 2000 periods. In this respect, the French experience is particularly disappointing with, if anything, longer time delays in 2000 periods. In this respect, the French experience is particularly disappointing with, if anything, longer time delays in 2000 periods. In this respect, the French experience is particularly disappointing with, if anything, longer time delays in 2000 periods.

Overall improvement in early outcomes certainly has several explanations; improved scientific knowledge leading to more appropriate medical care is central. As suggested by Murphy and colleagues,1 implementation of guidelines by more specialised medical personnel is also important. In the specific case of acute myocardial infarction, however, where every single minute matters, one cannot hope for much further improvement in outcomes in the absence of adequate, public oriented information in order to shorten the duration of acute myocardial ischaemia. And this may well be the most difficult task cardiologists will be confronted with in the next decade.

REFERENCES


IMAGES IN CARDIOLOGY

A guide catheter removed a massive intracoronary thrombus: a case of acute coronary syndrome

A 68 year old man without previous history of cardiac disease was admitted with syncope. The ECG showed ST segment elevation in leads II, III, and aVF, as well as advanced atrioventricular block. The right coronary artery angiogram showed a luminal filling defect suggestive of thrombus just proximal to an occlusion (panel A). It was decided to perform percutaneous coronary intervention for this lesion, using of a distal protection device and aspiration catheter. Monitoring of the blood pressure at the tip of a 7 French sized guide catheter suddenly became impossible after an aspiration catheter was pulled out. The guide catheter was found to be displaced from the ostium of the right coronary artery. We assumed that the occlusion had occurred at the tip of the guide catheter, therefore we tried to remove the whole system from the body. Fortunately, it was pulled out with negative pressure on the entire guide catheter and a massive thrombus was also aspirated (panels B and C). After that, we reinserted the catheter and performed coronary intervention. Finally, a stent was implanted at the culprit stenosis at the middle of the right coronary artery. We confirmed that TIMI III coronary blood flow was restored without residual intracoronary thrombi.

Because the aspiration catheter was pulled out through the guide catheter under negative pressure, the guide catheter itself may have acted as an effective aspiration system.

T Ono, H Hara, M Nakamura
harahisa@d1.dion.ne.jp

(A) Right coronary artery angiogram showing a luminal filling defect suggestive of thrombus just proximal to an occlusion.

(B) The guide catheter removed from the body. Thrombus is wedged at the tip of the guide catheter. (C) A massive thrombus related acute coronary syndrome was resolved by this fortuitous aspiration system.

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