Fibrinolysis or Angioplasty in Acute Myocardial Infarction?

To the Editor:

We read with interest the chapter entitled “Intravenous Thrombolysis in Acute Myocardial Infarction” in the Sixth ACCP Consensus Conference on Antithrombotic Therapy (January 2001). In the recommendations, it is stated “that patients with ischemic symptoms characteristic of acute MI [myocardial infarction] for < 12 h who have ST-segment elevation or left bundle-branch block on the ECG should receive IV fibrinolytic therapy unless they have contraindications (grade IA).” No mention of primary angioplasty has been made. Interestingly, in the previous recommendations (the Fifth ACCP Consensus Conference on Antithrombotic Therapy), it was stated that “either thrombolytic therapy or urgent angiography and PTCA [percutaneous transluminal coronary angioplasty] (primary angioplasty) should be considered for every patient with acute evolving MI for the reduction of mortality.” How must this significant change in the new recommendations be interpreted? Does it suggest that primary angioplasty is no longer considered as an alternative option? On the contrary, there is growing evidence that primary angioplasty is an excellent alternative in experienced centers. Moreover, it has been shown that primary angioplasty confers a long-term benefit, compared to thrombolytic therapy, for acute MI. Therefore, without entering into the debate between which management option is most appropriate, fibrinolysis or primary angioplasty, we think it should have been stated in the recent consensus document that primary angioplasty is another option (with grade IA evidence) in acute MI.

To the Editor:

We felt that discussing primary angioplasty vs thrombolysis was outside the scope of our review. We had opted to discuss only the pharmacologic therapies in detail. Nevertheless, I think Dr. Helft makes a good point that, at some point in the consensus document, we should make a reference to primary angioplasty and appropriate pharmacologic therapies. Currently, there is some information regarding antithrombotic therapy in primary angioplasty in the section on antithrombotic therapy for angioplasty.

I appreciate you bringing this to our attention, and I trust that you agree with our strategy of discussing the pharmacologic therapies rather than relative merits of different strategies for reperfusion. Those are well covered in the AHA guidelines for ST elevation (www.americanheart.org).

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Anaerobic Threshold and Thoracotomy Chest Pain

To the Editor:

We read with great interest the article of Miyoshi et al (August 2000) on the early postoperative exercise capacity of 16 patients who had undergone standard posterostructural thoracotomy and lung resection.

In one of their analyses, they compared the patients (31.3% of those in their series) who did not reach the empirical anaerobic threshold expressed by the venous blood lactate level of 2.2 mmol/L (La-2.2) during oxygen uptake (Vo2) with those who reached the threshold during the first postoperative cycle ergometer exercise test (mean [± SD], 9 ± 2 postoperative days). Miyoshi et al found that the circulatory and metabolic changes at anaerobic threshold could be used to guide patients with postoperative thoracotomy and lung resection.

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References


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In one of their analyses, they compared the patients (31.3% of those in their series) who did not reach the empirical anaerobic threshold expressed by the venous blood lactate level of 2.2 mmol/L (La-2.2) during oxygen uptake (Vo2) with those who reached the threshold during the first postoperative cycle ergometer exercise test (mean [± SD], 9 ± 2 postoperative days). Miyoshi et al found that the circulatory and metabolic changes at anaerobic threshold could be used to guide patients with postoperative thoracotomy and lung resection.

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ventilatory parameters were larger in patients with La-2.2 than in those without, and that both heart rate and respiratory reserves were smaller in the patients with La-2.2 than in those without. They concluded that pain from the surgical wound in the chest could be the most important limiting factor for patients without La-2.2 in the early postoperative period, even though subjective factors were not obtained in their study.

We performed a similar prospective study on 122 patients who were enrolled in our study from December 1999 through February 2001 and had undergone muscle-sparing thoracotomies and lung resections (segmentectomy/wedge resection, 15 patients; lobectomy, 88 patients; pneumonectomy, 19 patients) for lung carcinoma. Our exercise methodology consisted of a maximal symptom-limited, stair-climbing test that was administered at the time of the patient’s discharge from the hospital (mean, 8.2 ± 3.3 postoperative days). In our study, 24 patients (19.7% of our series) did not reach the empirical anaerobic threshold of La-2.2. However, no significant differences were detected between this group of patients and the others who reached the La-2.2 VO2, in terms of calculated work, maximal VO2 (VO2max; expressed as milliliters per minute, milliliters per minute per kilogram, or as the percentage of the predicted value), VO2max/body surface area ratio, and O2 pulse. Moreover, hemodynamic variables (ie, cardiac output, cardiac index, oxygen delivery, extraction ratio, and heart rate reserve), which were calculated by the Fick method, did not result in significant differences between the two groups of patients.

The only parameter that was significantly reduced in the group without La-2.2 vs the group with La-2.2 was the number of steps climbed (mean, 77.2 ± 30.8 vs 101.6 ± 33.2, respectively; p = 0.001 [Student’s t-test]).

We performed also a subjective analysis concerning the main symptoms that limited the patients’ exercise, and we found no difference between the two groups of patients. In particular, only three patients in the group without La-2.2 stopped exercising because of chest pain at the surgical wound. Dyspnea was the predominant symptom, followed by leg pain and physical exhaustion, in both groups of patients.

Contrary to what was reported by Miyoshi et al,1 we believe that in the early postoperative period the chest pain from thoracotomy is not the most important limiting factor for the patients who do not reach the empirical anaerobic threshold. However, differences in the type of thoracotomy incision and in the methodology of the exercise test have to be taken into account.

Since there was no difference in the values of ergometric variables between the two groups of patients in our series, a low level of arterial blood lactates at peak exercise in some patients may be explained by a previously reported intersubject variability of the anaerobic threshold value3 or may simply reflect the better fitness of some individuals for endurance (aerobic) exercise.

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REFERENCES

To the Editor:

We thank Dr. Brunelli and his colleagues for their interest in our article (August 2000).1 They performed a similar prospective study on lung cancer patients in the early postoperative period (mean [± SD] postoperative days, 8.2 ± 3.3), using a stair-climbing test. Although they observed patients without a venous blood lactate level of 2.2 mmol/L (La-2.2) [24 subjects; 19.7% of their series], as we did, there was no difference in the values of ergometric variables between patients with and without La-2.2. These findings were different from our results.

As has been pointed out, there were two major differences between our study and that of Brunelli et al. We employed a standard posterolateral thoracotomy in all patients studied, while Brunelli et al performed a muscle-sparing thoracotomy in their patients. This variation may produce differences in postoperative chest pain and compliance of the chest wall, especially in the early postoperative period. Patients are likely to be able to attain a larger maximum oxygen uptake (VO2max) if they do not feel chest pain during exercise. The differences between these thoracotomy approaches were not detected by pulmonary function testing.2 A cardiopulmonary exercise test is a loading test for both cardiovascular and respiratory systems, and may be more sensitive when evaluating the differences between these thoracotomy approaches.

The other difference between the two studies is the methodology used for the exercise test. We utilized an incremental exercise test, which was designed to obtain an anaerobic threshold as well as VO2max. A stair-climbing test is considered to be constant work under great stress and is not meant for detecting the anaerobic threshold. Although it is simple and useful for clinical use,3 a stair-climbing test has limitations when investigating the mechanism behind the results.

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REFERENCES

Urinary Antigen Test for Pneumococcal Pneumonia

To the Editor:

We read with interest the editorial by Dr. Pesola1 (January 2001) and his comments on our study,2 which was recently featured in your publication. With a view to enabling better