

Transradial Approach for Primary Angioplasty. Necessity or Tightrope Walking?

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The controversy surrounding the best approach for reperfusion in acute myocardial infarction has been all but resolved in the last year. The latest battles of the "reperfusion wars" (a term used by W. O'Neill et al¹) have shown angioplasty to be superior in almost every context tested. The last remaining stronghold for fibrinolytic therapy is in the comparison of angioplasty with prehospital thrombolysis, although such therapy can be considered part of rescue angioplasty.² During 2003, logistic objections were largely refuted when benefit was shown in patients who were transferred to a hospital with percutaneous facilities in less than 3 hours.³⁻⁵ On the other hand, use of potent glycoprotein IIb/IIIa inhibitors is gaining support despite contradictory results,^{6,7} and many laboratories systematically administer such inhibitors during primary angioplasty. Finally, facilitated angioplasty with administration of thrombolytics and glycoprotein IIb/IIIa inhibitors prior to angioplasty is being investigated in numerous studies, the forerunner of which was the GRACIA-2 study.⁸ In any case, the drug facilitated invasive procedure is particularly attractive when angioplasty cannot be carried out within 3 hours.

The study of Díaz de la Llera et al should be considered in this context.⁹ The authors of this important article retrospectively analyzed their experience with angioplasty in acute myocardial infarction, classifying patients according to whether transradial or transfemoral approach was used. Doubts about whether such groups are comparable aside, the authors found that 64% of interventions used the transradial approach

and that examination times were similar and within reasonable bounds in both groups. Furthermore, no vascular complications were reported in the group with transradial approach despite extensive use of abciximab (68%) and rescue or facilitated angioplasty in 42% of the patients. The authors correctly highlight the subjective nature of the choice of approach, with the possible bias that this introduces. Nevertheless, even the most conservative interpretation of the article would lead us to conclude that an experienced team is able to select patients in which primary angioplasty with transradial approach can be safely and effectively used.

One may ask whether the approach used is of genuine interest or a technical mirage invented by bored interventional cardiologists in the grip of the snobism sometimes present in the environment of percutaneous intervention? We think that the benefit of the transradial approach in primary angioplasty is justified by the following points. First, the incidence of hemorrhagic complications at the site of puncture is lower. Such complications are not the most serious but they are the most frequent of the overall hemorrhagic complications. The use of thrombolytics, potent antiplatelet agents that act on the glycoprotein IIb/IIIa receptor, or a combination of the two, is also frequent in such patients. Only 1 randomized study has compared the transradial approach with the transfemoral approach in the context of acute myocardial infarction,¹⁰ but it did not enroll patients receiving either thrombolytics or glycoprotein IIb/IIIa receptors, so such information has to be extrapolated from comparative registries¹¹ or experience in conventional angioplasty.¹² In both cases, the superiority of the transradial approach for reducing hemorrhagic complications is clear. The comfort of the patient, a variable that is hard to assess, is generally better with the transradial approach unless hemostatic devices are used, though this clearly increases the cost of the procedure.

The transradial approach in acute infarction has several drawbacks. Most importantly, reperfusion is de-

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layed because of the additional technical difficulties that this approach entails. Salgado Fernández et al¹² analyzed this aspect and found clear differences in failure rate (need to crossover to transfemoral approach) and procedure duration for the first 200 patients in whom the transradial approach was used compared to the next 200. This difference, however, disappears when angioplasty is performed by experienced groups.^{10,11,13} Furthermore, the need to use devices that require guidewire catheters with a caliber greater than 6 Fr could be an argument in favor of transfemoral approach but, at present, almost all devices are introduced through 6-Fr catheters. The difficulty of accessing a central vessel such as the femoral vein is often cited while forgetting that the femoral vein is just as accessible if necessary, thus limiting some of the advantages of the isolated transradial approach. Finally, the benefits derived from early mobility of patients treated by transradial approach are not applicable in acute infarction, in which rest depends on the clinical situation.

A pertinent question is whether the aforementioned advantages, in particular the almost complete lack of vascular complications, justify the necessary disadvantage of having to overcome the learning curve (at least 200 procedures) to guarantee short, safe procedures. The answer lies in the logistic difficulties of making primary angioplasty available to the general population. For example, centers with percutaneous facilities for infarction and an appropriate transport system have to be available. Hospitals in which primary angioplasty can be performed would either be faced with an almost disproportionate demand for beds in the coronary unit or have to consider sending the patients back once they were stable after primary angioplasty—more feasible with the transradial approach. Furthermore, transradial approach has a lower risk of bleeding and so is safer in patients whose treatment with different combinations of “facilitating” drugs or thrombolytics has failed.

In short, transradial approach in primary angioplasty has obvious advantages: it reduces hemorrhagic complications and broadens the range of patients who are candidates for such an intervention. Therefore, the transradial approach is more than just a technical mirage as it provides solutions to some logistic problems.

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