Correspondence

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Interpretation of Trials on Provisional Stent Implantation

To the Editor:

We read with interest the views of Anderson and Carabello on the state of elective versus provisional stenting (ie, stenting when optimal PTCA is not obtained, as verified by physiological measurements or intravascular ultrasound), with reference to the French Randomized Optimal Stenting Trial (FROST), the Doppler Endpoints Balloon Angioplasty Trial Europe (DEBATE-II) study, and the Doppler Endpoint STenting In International Investigation (DESTINI).

Anderson and Carabello concluded that elective stent implantation is superior to and less costly than provisional stenting. However, the FROST, DEBATE-II, and DESTINI trials all reported a remarkably similar incidence of target lesion revascularization and major adverse cardiac events (MACE) after elective and provisional stent implantation (MACE in elective versus provisional stenting: FROST, 16.0% versus 15.1%; DEBATE-II, 13.4% versus 15.9%; and DESTINI, 17.8% versus 18.9%). The Optimum Percutaneous Transluminal Coronary Angioplasty Compared With Routine Stent Strategy (OPUS-I) trial, a study of different design, was cited as supporting elective stenting (MACE in elective versus provisional stenting: 7.4% versus 16.5%), but this study did not include a physiological parameter for clinical decision-making.

In the FROST, DEBATE-II, and DESTINI trials, ~50% of the patients in the provisional stent arm required a stent implantation, indicating that the remaining 50% of the patients had a good clinical outcome without a stent. From a clinical perspective, this is a critically important observation. A restenotic lesion after balloon angioplasty can easily and effectively be treated with a stent, but the treatment of in-stent restenosis is still cumbersome, if not clinically unsuccessful, during the next year. Furthermore, an unexpected but highly provocative finding from the DEBATE-II study indicated that patients with an optimal result after balloon angioplasty followed by stent implantation had a target lesion revascularization of 3.9%, the lowest rate ever reported. This finding further supports recent data showing superior clinical outcomes when stent implantation is guided by relative coronary flow reserve. Although continued examination is required, these results point to an important additional role of intracoronary physiological parameters, beyond their diagnostic value, for guidance of coronary interventions.

On the basis of the available data on cost-effectiveness, it is premature to conclude that elective stent implantation always wins over a provisional approach. Rather, the current studies show that intracoronary diagnostic techniques provide information, beyond that obtained by the eyes of experienced angiographers, that is highly relevant for clinical decision-making in coronary interventions. Although the current clinical trend toward elective stenting is in vogue because of its many benefits, both real and perceived (ie, ease of stent placement, more satisfying angiography, and physician’s convenience after the procedure), stent implantation for all elective procedures is not supported by randomized clinical data.

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