

Coronary artery bypass grafting: “stents” versus surgery

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It is unnecessary to reiterate that there is a high prevalence of coronary artery disease in the population. The risk increases with the patient’s age and a reduction of certain diseases that were prevalent in the past. Surgeries for coronary artery bypass grafting are the most studied throughout the history of surgery and always presented with consistent results. The advent of angioplasty and, soon after, of conventional Stents followed by drug-eluting stents, changed concepts that had been very well established. A true boom occurred due to this technology, that is apparently less aggressive, in the belief that it would be possible to attain outcomes comparable to those achieved using coronary artery bypass graft surgery.

As with all new developments, there was a euphoric phase followed by doubt, uncertainty, disappointment, reflection and, finally, a period of stabilization with their use becoming more cautiously indicated (Fig. 1).

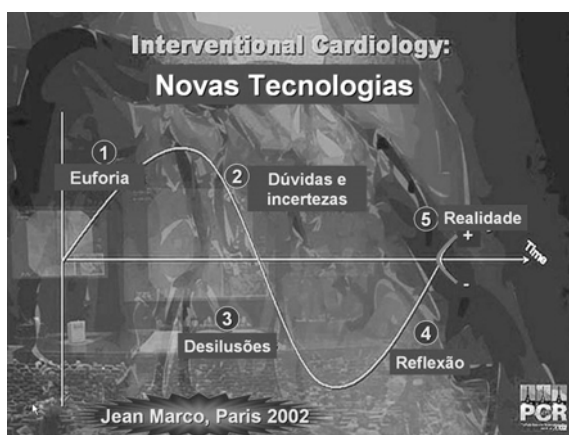


Fig. 1 – Phases of the implantation of new technology

This was no difference with the utilization of stents, including drug-eluting stents. Most surgeons have observed that, in spite of interesting short-term results

with the dilatation of coronary arteries and stent implantation, these are not maintained over midium-term and long-terms (Fig. 2), in particular due to restenosis and generalized inflammatory processes [1].

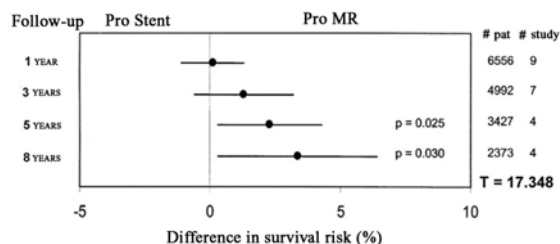


Fig. 2 - Metanalysis of 9 randomized controlled trials: Stent versus coronary artery bypass graft surgery in multiple arterial disease – Guyton, 2006 [2]

The new techniques developed and used by hemodynamicists to reduce complications of conventional stents, resulted in the development of drug-eluting stents. These were imagined, by some, to be the definitive solution, avoiding the feared restenosis as is seen in 20% to 40%, of cases using conventional stents depending on the which artery is treated and on the author [3].

In a recent metanalysis analyzing the incidence of infarction and mortality [2] it was clear that the use of drug-eluting stents did not offer any advantages over conventional stents (Figures 3 and 4).

In a work by Ben-Gal et al. in 2006 [4], “Drug-eluting stents versus arterial myocardial revascularization in patients with diabetes mellitus”, it is evident that there is an advantage of coronary artery bypass grafting over drug-eluting stents in diabetic patients (Fig. 5).

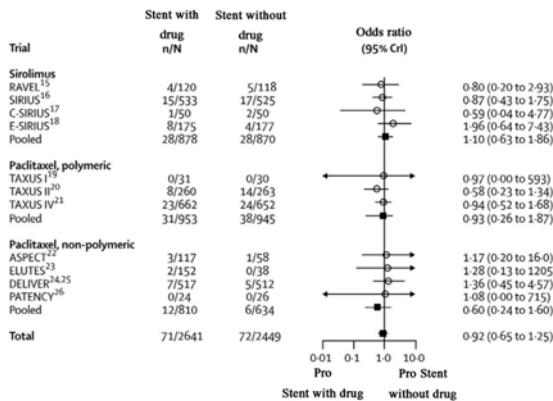


Fig. 3 – Metanalysis (Forest plot) of trials on myocardial infarction comparing drug-eluting stents and conventional stents. No significant difference was identified – Guyton, 2006 [2]

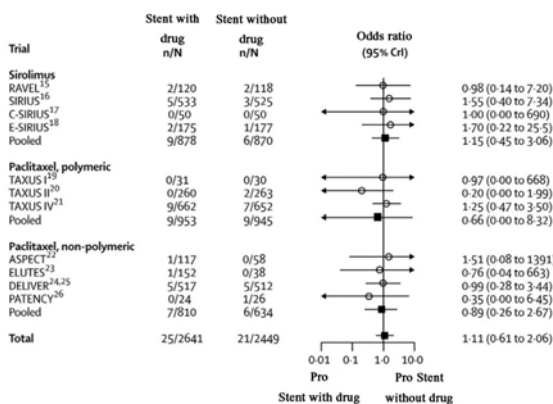


Fig. 4 – Metanalysis (Forest plot) of trials on mortality comparing drug-eluting stents and conventional stents. No significant difference was identified – Guyton, 2006 [2]

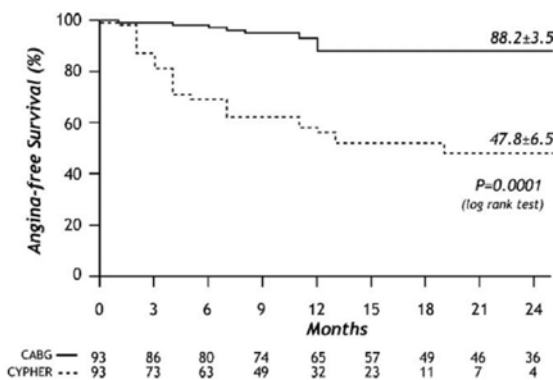


Fig. 5 – Survival free from angina comparing the Cypher stent and coronary bypass grafting surgery – Ben-Gal et al. 2006 [4]

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Thus, it is clear that drug-eluting stents do not provide a better outcome when compared to conventional stents that continue to present with a serious problem of restenosis.

Recent data from Ong & Serruys [5] showed the advantage of coronary artery bypass grafting over stents even when revascularization is not total (Fig. 6).

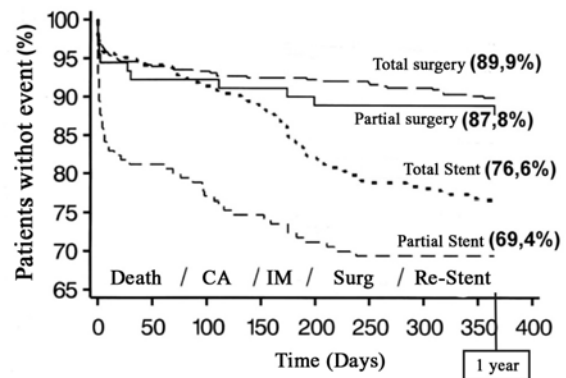


Fig. 6 – Kaplan-Meier’s curve showing survival free from cerebrovascular events over one year based on the ARTS Trial. Stratification was by type of treatment (surgery or stent) and total or partial revascularization (Ong & Serruys, 2006, apud van den Brand et al. [6])

There is still a concern about the high risk in the use of drug-eluting stents because of a possibility of acute thrombosis leading to severe infarction and possible death [7]. This fact has already been highlighted in the media [8].

In conclusion, I transcribe here a free adaptation of some topics presented by Dr. Salim Yussuf in his conference at the World Congress of Cardiology in August 2006 in Barcelona.

- Conservative treatments should be called AGGRESSIVE THERAPY;
 - MACE (Major Adverse Cardiac Events) is an artificial event caused totally by ANGIOPLASTISTS;
 - If angioplasty or stent implantation is not performed, RE-STENOSIS IS ZERO;
 - Angioplasty or stent implantation is the same as a surgeon removing breast cancer leaving behind the METASTATIC DISEASE;
 - Luminology is similar to Astrology;
 - We were seduced by concern with angioplasty and stents.
- “THIS PERVERTED ALL CARDIOLOGY”

I allow readers to come to their own conclusions about these current data, in order that they can evaluate the best indication in the treatment of coronary patients.

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