Achievements and challenges in PCI of elderly patients

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The very elderly patient population (>80 years) represents a rapidly increasing segment of our demographics, a consequence of the longer life expectancy and aging of the "baby boom" generation. Coronary artery disease remains a major cause of mortality and morbidity among octogenarians with an estimated 30% of them having symptomatic heart disease and 50% eventually dying from it.

Aggressive interventional procedures are less commonly performed in elderly patients because of cultural beliefs and concerns of high periprocedural complications. However with increased operator experience, improved techniques and patient care, and refinement of devices, interventional cardiologists have recently been more emboldened in performing percutaneous revascularisation in the elderly. Indeed, coronary revascularisation is superior to medical therapy in providing symptom relief and improved quality of life in elderly patients with symptomatic angina. This was further supported by the larger study done in Alberta where the absolute adjusted mortality risk reduction following revascularisation was greatest in the >80 years age group. In this issue of the journal, Malenka et al showed that there had been significant change over time in adjusted adverse event rates for the octogenarians. There was a significant decrease over time in mortality (P=0.04) and decrease of borderline significance in the rates of emergency coronary artery bypass graft (CABG) (P=0.08) and post-procedure ST-segment elevation MI (P=0.10). The clinical success rate increased significantly over time (P<0.01) from approximately 87% in the mid-1990s to 92% by 2001.

There is no doubt that elderly patients undergoing percutaneous coronary intervention (PCI) are at an increased risk for complication compared to younger patients. Octogenarians had an increased risk of death (3.8% vs 1%), ST elevation infarction (1.9% vs 1.3%), renal failure (3.2% vs 1%) and vascular complications (6.7% vs 3.3%) compared to younger patients. Wennberg et al reported that procedural mortality risks rose 5-fold in those older than 80 years when compared with those younger than 60. Malenka et al showed that death was increased 3.5 fold (2.03% vs 0.58%) in the >80 age group compared to those under 50, both in emergency and no-emergency PCI settings. While the relative risk may appear prohibitive, it should be noted that the absolute mortality risk was only 2% in this study suggesting that modern percutaneous interventional techniques using coronary stent (65.8% in the report) and glycoprotein IIb/IIIa receptor inhibitors (27.7%) have markedly improved the safety profile of the procedure. The competing strategy of aortocoronary bypass surgery fares even worse with procedural mortality risk ranges from 7% to 11% in most series.

This study is limited by the lack of long-term outcomes of patients undergoing PCI. The reported events were all in-hospital outcomes and does not show how age affects long term survival and need for repeat interventional procedures. The study also did not address the effect of treatment on patients' quality of life such as degree of symptom relief and functional capacity. Interestingly, while 51.9% of patients had multivessel disease, only 13.2% of octogenarians had more than 2 vessels treated. This would mean that more than half of elderly patients are at risk for continued or recurrent symptoms.

The decision with regard to treatment modality in the aged remains a challenge to both patients and clinicians who must fully balance the risks and benefits of the various treatment options. This report adds to the knowledge base that we needed concerning the magnitude of risk and benefit in the treatment of this high risk cohort of patients.

References