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## Effectiveness of secondary prevention: the problem of advanced age - Part II

Although the number of patients of advanced age is increasing, especially in the Western industrialized countries, information about treatment and its efficacy is scanty. In essence, the doctors are rather reluctant to apply intensive treatment—eg, in acute myocardial infarction—they are afraid of unwanted effects. The increased complication rate in the elderly, however, has to be balanced out with the often critical prognosis. With increasing age, not only in-hospital mortality but also 1-year mortality, increases almost exponentially. Death rate at 1 year increases from about 4% at 50 years to 6% at 60 years, 12% at 70 years, 25% at 80 years, 45% at 90 years, and 80% at 100 years. It is understandable that due to this bad prognosis, especially at holder ages, doctors are reluctant to apply treatment which has been shown to be effective at younger ages. On the other hand, in acute coronary events as well as in the chronic secondary prevention period, the benefits of treatment are better, the worse the spontaneous prognosis is.

Although overwhelming evidence exists of a significant survival advantage in postinfarct patients,  $\beta$ -blocker therapy is greatly underprescribed. In the Cooperative Cardiovascular Project, medical records of 201 752 patients with myocardial infarction were abstracted. Treatment with  $\beta$ -blockers was associated with a 40% reduction in mortality. This beneficial effect was likewise present in patients with STEMI and NSTEMI. Due to a higher mortality, patients  $\geq 80$  years, with LVEF  $< 20\%$  or diabetes mellitus had a lower percentage reduction in mortality with  $\beta$ -blocker therapy, but absolute reduction in mortality was similar or even greater in these subgroups. These results are similar to those demonstrated by subgroup analysis of placebo-controlled trials.<sup>1</sup> However, only 34% of the elderly cohort was discharged on  $\beta$ -blockers and of the postinfarct patients (post-MI)  $> 65$  years of age with no contraindications to  $\beta$ -blocker therapy, only half left hospital on this therapy.<sup>2</sup>

In elderly ( $\geq 65$  years) Medicare beneficiaries with myocardial infarction and no absolute contraindications to aspirin, its use was significantly associated with a lower mortality and improved 6-month outcome. However, only 76% of these patients were discharged home on aspirin.<sup>3</sup>

According to a meta-analysis in post-MI patients with a LVEF  $< 40\%$  or heart failure, ACE inhibitors significantly reduced mortality, heart failure hospitalizations, and recurrent MI. This benefit was consistent across the age groups  $< 55$  years, 55-75 years, and  $> 75$  years.<sup>4</sup>

In the CARE trial, 1283 post-MI patients aged 65 to 75 years were randomised to pravastatin or placebo. Five-year cardiac event rate was reduced by 32% in the treatment group. Coronary death and stroke were also significantly reduced. The number needed to treat (NNT) for the prevention of a major cardiovascular event was 11, and for coronary death 22.

These results were confirmed in the PROVE-IT trial, investigating a more aggressive lipid-lowering therapy. The reduction in death, MI, stroke, revascularization, or readmission for ACS was also present in patients  $\geq 70$  years of age. In the Heart Protection Study 5806 subjects were  $\geq 70$  years of age. After statin therapy for 5 years, cardiovascular event rate was significantly lower in the treatment group. According to an observational study of 7000 patients with angiographic documented IHD in those on statin therapy mortality was significantly lower after 3.3 years regardless of age. However, prescription of statins at discharge decreased significantly with age;  $< 20\%$  of patients  $> 80$  years of age received this treatment,<sup>5</sup> and a large proportion stopped statin therapy soon after hospitalization.<sup>6</sup>

The association between physicians' treatment, baseline cardiovascular risk, and age was evaluated in a retrospective cohort study in 396 077 patients aged  $\geq 66$  years who had a history of cardiovascular disease or diabetes. The probability of statin prescription in the age group 66 to 74 years was for 37.7% low risk, 28.7% for intermediate risk, and 23.4% for high risk; in the age group 75 to 80 years: 28.8% for low risk, 19.0% for intermediate risk, and for 16.0% high risk, and in the age group  $\geq 81$  years: 13.6% for low risk, 6.6% for intermediate risk, and 4.4% for high risk.<sup>7</sup> These results demonstrate that prescription of statins diminished progressively both with increased baseline risk and higher age. Hence, statins were withheld when the probability of future death increased, despite the well-known and established fact, that the benefits of therapy are dependent on the baseline risk.

**In the elderly with CHD, the maximum benefits of secondary prevention pharmacotherapy are not fully realized until implementation of therapy in patients at high risk and advanced age is achieved.**

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