

## ABSTRACTS



### Grafts versus stents in multivessel disease

The result of a study recently published in *JAMA Internal Medicine* points out that recent trials of percutaneous coronary intervention (PCI) v. coronary artery bypass grafting (CABG) for multivessel disease were not designed to detect a difference in mortality. Consequently, the comparative effects of these two revascularisation methods on long-term mortality are still unclear. In the absence of hard evidence for mortality difference, PCI is often preferred over CABG in these patients, given the less invasive nature of the former.

Sipahi *et al.* used a meta-analysis of all randomised clinical trials of the current era that compared the two treatment techniques in patients with multivessel disease to determine the comparative effects of CABG v. PCI on long-term mortality and morbidity.

These included randomised trials with  $\geq 1$  arterial grafts used in at least 90% and  $\geq 1$  stents used in at least 70% of cases, reporting outcomes in patients with multivessel disease. The number of events at the longest possible follow-up time and the sample sizes were extracted.

Six randomised trials enrolling a total of 6 055 patients were included, with a weighted average follow-up time of 4.1 years. There was a significant reduction in total mortality with CABG compared with PCI. There were also significant reductions in myocardial infarction and repeat revascularisation procedures. A trend towards excess strokes with CABG was observed, but this was not statistically significant.

In patients with multivessel coronary disease, CABG compared with PCI leads to an unequivocal reduction in long-term mortality and myocardial infarction and to a reduction in repeat revascularisations, regardless of whether patients are diabetics or not. These findings have implications for the management of such patients.

Sipahi I, Hakan Akay M, Dagdelen S, et al. Coronary artery bypass grafting vs percutaneous coronary intervention and long-term mortality and morbidity in multivessel disease. Meta-analysis of randomized clinical trials of the arterial grafting and stenting era. *JAMA Intern Med* 2014;174(2):223-230. [http://dx.doi.org/10.1001/jamainternmed.2013.12844]



### Diabetes and ageing

There are, and will continue to be, larger populations of older adults with type 2 diabetes mellitus in nearly all countries. Consequently, it will be even more important to try to understand the clinical course of this disease in the elderly to establish evidence-based clinical practice recommendations, identify research priorities, allocate resources and

set healthcare policies in those countries most affected. Huang *et al.* report on the 'Diabetes and aging study', recently published in *JAMA Internal Medicine*.

They analysed contrasting rates of diabetes complications and mortality across age and diabetes duration categories using a cohort study (2004 - 2010) that included 72 310 older patients ( $\geq 60$  years) with type 2 diabetes mellitus enrolled in a large, integrated healthcare delivery system. Incidence densities (events per 1 000 person-years) were calculated for three age categories (60 - 69, 70 - 79, and  $\geq 80$  years) and duration of diabetes (shorter (0 - 9 years) v. longer ( $\geq 10$  years)).

The main outcome measures were acute hyper- and hypoglycaemic events, microvascular complications (end-stage renal disease, peripheral vascular disease, lower limb amputation, and diabetic eye disease), cardiovascular complications (coronary artery disease, cerebrovascular disease, and congestive heart failure), and all-cause mortality.

They found that among older adults with diabetes of short duration, cardiovascular complications followed by hypoglycaemia were the most common non-fatal complications. For example, among individuals aged 70 - 79 years with a short duration of diabetes, coronary artery disease and hypoglycaemia rates were higher compared with end-stage renal disease, lower limb amputation, and acute hyperglycaemic events. A similar pattern among patients in the same age group with a long duration of diabetes, with some of the highest incidence rates of coronary artery disease and hypoglycaemia (18.98 per 1 000 person-years and 15.88 per 1 000 person-years, respectively) compared with end-stage renal disease (7.64 per 1 000 person-years), lower limb amputation (4.26 per 1 000 person-years), and acute hyperglycaemic events (1.76 per 1 000 person-years), was found. For a given age group, the rates of each outcome, particularly hypoglycaemia and microvascular complications, increased dramatically with longer duration of the disease. However, for a given duration of diabetes, rates of hypoglycaemia, cardiovascular complications, and mortality increased steeply with advancing age, and rates of microvascular complications remained stable or declined.

The conclusion is that duration of diabetes and advancing age independently predict diabetes morbidity and mortality rates. As long-term survival with diabetes increases and the population ages, more research and public health efforts to reduce hypoglycaemia will be needed to complement ongoing efforts to reduce cardiovascular and microvascular complications.

Huang E, Laiterapong N, Liu JY, et al. Rates of complications and mortality in older patients with diabetes mellitus: The diabetes and aging study. *JAMA Intern Med* 2014;174(2):251-258. [http://dx.doi.org/10.1001/jamainternmed.2013.12956]

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