

## INTERVENTIONAL CARDIOLOGY

### CAUSES OF DEATH AFTER PCI

After percutaneous coronary intervention (PCI)—now in its fourth decade of use—patients increasingly tend to die from noncardiac rather than cardiac causes. This finding comes from a retrospective study of patients at the Mayo Clinic in Rochester, MN, USA. “In order to appropriately align efforts towards reducing long-term mortality after PCI,” says Rajiv Gulati from the Mayo Clinic, “we believed it was crucial to understand causes of death in this population, temporal trends in cause-specific mortality, and the mechanisms underlying these trends.”

Between 1991 and 2008, 19,077 patients survived hospitalization for a first PCI, and 37% subsequently died. The cause of death was determined in 98.1% of these individuals. Patients were divided into three groups according to date of index PCI (1991–1996, 1997–2002, and 2003–2008). Cardiac death at 5 years after PCI declined by 33% over these time periods (incidence 9.8%, 7.4%, and 6.6%), whereas noncardiac death increased by 57% (7.1%, 8.5%, and 11.2%). A 50% temporal decline in cardiac mortality remained after adjustment for baseline variables, whereas no significant change in noncardiac mortality remained. The temporal trends were driven by a reduction in deaths from myocardial infarction or sudden cardiac death ( $P < 0.001$ ), but not heart failure, whereas death from cancer and chronic diseases increased ( $P < 0.001$ ).

Dr Gulati suggests that the decline in cardiac death might be attributable to “improvements in secondary preventive therapies (an increase in the uptake of statins, angiotensin-converting-enzyme inhibitors, and  $\beta$ -blockers was seen across eras) and possibly also improvements in PCI technologies and performance”. The investigators assert that “attention to the comprehensive management of noncardiac comorbidities might arguably offer significant returns in combination with a continued focus upon cardiac strategies”. Gulati and colleagues now plan to assess cause-specific mortality trends and mechanisms in subgroups of patients who are known to be at high risk of death after PCI, such as those with ST-segment elevation myocardial infarction or comorbid peripheral artery disease. They will also use the information to create risk models for the prediction of cause-specific death.

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