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## The challenge of acute coronary syndromes in South Africa

Atherosclerotic coronary artery disease remains highly prevalent in South Africa. Whereas in the past the disease predominantly affected the white and Indian population groups, there is a slow but steady rise in the prevalence of coronary artery disease in the black African population. This is in concert with findings from other developing nations where the prevalence of atherosclerotic coronary artery disease is also increasing. The reasons for this increase in prevalence are multifactorial including rapid urbanization, high smoking rates, lack of exercise and adoption of western dietary patterns. The net result is that the burden of atherosclerotic heart disease is increasing in South Africa. There are few prevalence studies but it is estimated that 80 000 patients present with acute coronary syndromes per year in South Africa.

Over the last two decades considerable advances have been made with regard to our understanding of the mechanisms underlying acute coronary syndromes. In response to these advances a number of treatment strategies have been developed and tested in many randomized trials. Despite our current understanding of the disease process and modern treatment strategies, the risk of death or non-fatal myocardial infarction (MI) is about 10% at 30 days and the risk of an adverse outcome at 6 months remains high at 30%. Therefore, the management of acute coronary syndromes remains an ongoing challenge. Appropriately, this issue of SA Heart focuses on aspects of management of patients with acute coronary syndromes.

The treatment of acute myocardial infarction can be problematical, especially in environments with constrained resources and other logistical barriers. As a result primary PCI is applicable to only a small number of patients in South Africa and the majority of patients receive thrombolytic therapy. Thus refinement of management of the post-thrombolytic period becomes more relevant. In his article Hellig elegantly discusses the strategies of mechanical intervention in acute myocardial infarction and highlights the role of facilitated and rescue PCI. In addition, his paper addresses mechanical methods such as distal protection and thrombectomy devices that may facilitate procedural success during PCI.

One of the most hotly debated issues in the management of non-ST elevation MI revolves around the timing of cardiac catheterization. This debate is also more important in countries like South Africa where practice patterns (largely dictated by health resources) differ. Vorster et al. critically evaluate the role of early versus late intervention in patients with non-ST elevation myocardial infarction and highlight the role of risk stratification in the selection process.

Management of lipids has become the cornerstone of primary and secondary prevention of atherosclerotic coronary artery disease. However, lipid lowering in acute coronary syndromes has received less attention. Mamdoo et al. in their paper discuss the role of lipid lowering in acute coronary syndromes and debate the issue as to how low LDL cholesterol should be reduced by pharmacological means.

Cardiac biomarkers have traditionally played a significant role in the diagnosis of acute coronary syndromes. They are now recognized to be of importance in risk stratification as well. Besides the traditional biomarkers, newer biomarkers have come to the fore. Ranjith et al. review the current role of the established biomarkers and appraise the potential role of the newer biomarkers in the diagnosis, risk stratification and management of patients with acute coronary syndromes.

One of the fundamental management strategies of acute coronary syndromes involves the use of potent anti-platelet and antithrombotic therapies. These aggressive therapies lead to increased bleeding risk. Thus the most recent ESC guidelines take into account the benefit-risk ratio, expressed as number needed to treat and number needed to harm to produce one event.<sup>(1)</sup> Khan in her paper importantly details the risks of bleeding and anemia in acute coronary syndromes and discusses its impact on outcome.

We have come a long way in treating patients with acute coronary syndromes. There is little doubt that ongoing efforts with new therapies and refinement of current treatment strategies will benefit our patients in the short and long term.

**References:**

1. Bassand JP, Hamm CW, Ardissino D et al. Guidelines for the diagnosis and treatment of non-ST-segment elevation acute coronary syndromes. The Task Force for the Diagnosis and Treatment of Non-ST-Segment Elevation Acute Coronary Syndromes of the European Society of Cardiology. *Eur Heart J*. 2007;28:1598-1660