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Editorials

Management of acute coronary syndrome

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Acute coronary syndrome consists of acute myocardial infarction with or without ST segment elevation and unstable angina. Cardiac enzymes are not raised in unstable angina. Acute coronary syndromes are a major cause of morbidity and mortality and constitute the largest medical indication for hospitalisation in the UK. Twelve million individuals in the USA and 143 million worldwide have coronary artery disease. Two million US patients are admitted annually to cardiac care units with acute coronary syndrome.

According to GRACE (Global Registry of Acute Coronary Events) registry, 12% of patients with ST segment elevation, 13% of patients with non-ST segment elevation and 8% of those with unstable angina are expected to die within 6 months following the onset of symptoms. 50 lives are saved per 1000 patients treated with thrombolytic agent and aspirin. The results of seven clinical trials indicate no advantage in combining thrombolytic treatment with GP 11b/111a inhibitors. But the primary PCI combined with GP 11b/111a blockers (abciximab) is known to reduce myocardial infarction. According to BRAVE (Bavarian Reperfusion Alternatives Evaluation) trial, there is no benefit with the addition of reteplase to abciximab in PCI. GP11b/111a inhibitors are least prescribed to patients with ACS in the UK (3%UK, 7% Europe)

Thienopyridenes inhibit ADP mediated platelet aggregation. Clopidogrel has been shown to have additional benefit when combined with aspirin in acute coronary syndrome. According to CURE (Clopidogrel in Unstable angina to prevent Recurrent Events) trial, a 2.1 % absolute risk reduction in non-fatal MI, stroke, or cardiovascular death is expected with the use of clopidogrel in addition to aspirin. In non-ST segment elevation ACS, the European Society of Cardiology (ESC), the American College of Cardiology (ACC) and the American Heart Association (AHA) guidelines recommend nine months treatment with clopidogrel.

There is not enough evidence for the use of clopidogrel in acute ST elevation MI treated with thrombolysis. About 1% patients on clopidogrel may have major bleeding. ESC recommends primary PCI to patients with ST segment elevation or new left bundle branch block within 90 minutes after the onset of symptom. Presently primary PCI is not feasible in our country because of the lack of facility. Primary PCI does not seem to be popular even in the United Kingdom. Only 1% of patients with ACS undergo primary PCI in UK. In Europe 29% of patients with ACS undergo primary PCI.

Even in Nepal the number of patients with acute coronary syndrome is increasing. Persons with central chest pain should always be observed to rule out coronary artery disease. In the initial examination, such patients may not have any abnormal findings. During the period of observation in the coronary care unit some of them may develop acute myocardial infarction. Some may show ST-T wave changes in the ECG whereas others may not have any findings. Any person suspected to have acute coronary syndrome should be admitted to CCU and monitored. Sub cutaneous low molecular weight heparin in two divided doses is prescribed for 6 days. Aspirin, clopidogrel, Betablockers and Nitrates are advised routinely. Some patients may need angiotensin converting enzyme inhibitors and calcium channel blockers. Primary PCI with GP 11b/111a inhibitors will be possible only in a few percentage of patients.

After the initial treatment of acute coronary syndrome, coronary risk factors should be identified and the patient is advised accordingly. Coronary angiography is still the gold standard investigation to diagnose coronary artery disease. Stress electrocardiography, stress echocardiography, stress thallium scanning and intra-coronary ultrasonogram are done commonly in many modern cardiac centres. CT and MRI angiography have been introduced in the recent years for the diagnosis of coronary artery disease non-invasively. These diagnostic modalities may become popular in future. The attending physician should advise only the essential investigations to confirm the diagnosis and help the patients for proper management.

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