

Management of Large and Small Vessel Vasospastic Disorders

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Coronary heart disease involves the interplay of atheroma, thrombosis and vasospasm. Although considerable focus has been directed towards therapies targeting the atherothrombotic processes, vasospasm continues to receive little attention. Furthermore, segmental heterogeneity in vasomotor responses exemplifies the importance of targeting specific vascular beds, since therapies effective in large vessel spasm may not necessarily be applicable in the microvasculature. The clinical importance of vasospasm in coronary heart disease is illustrated by two recent studies involving the use of calcium channel blockers.

Contemporary management of acute ST Elevation Myocardial Infarction (STEMI) focuses on reperfusion therapy. Initially thrombolytic therapy was utilised but in more recent times primary percutaneous coronary intervention has become the desired reperfusion strategy. In an unconventional reperfusion strategy approach, we administered intravenous nitrates and verapamil to consecutive acute STEMI patients and demonstrated ST segment resolution in over a third of patients, prior to the institution of 'atherothrombotic reperfusion therapy'. This uncontrolled study implicates vasospasm as an important pathogenetic mechanism in these patients. The randomized, double-blind, placebo-controlled IVANA Study (Intravenous Verapamil And Nitrates in Acute myocardial infarction) is nearing completion and will provide further insights into the role of vasospasm in acute STEMI.

The Coronary Slow Flow Phenomenon (CSFP) is a coronary microvascular disorder characterized by delayed distal vessel opacification in the absence of obstructive epicardial coronary artery disease. This condition frequently presents with an acute coronary syndrome and patients often experience recurrent disabling angina. Although verapamil is of limited benefit in this syndrome, mibefradil (a combined calcium L- and T-channel blocker) is very effective in controlling the associated angina as demonstrated in a randomized, double-blind, placebo-controlled, cross-over trial. Ongoing investigations suggest that an increased expression of calcium T-channels in the microvessels may contribute to mibefradil's benefits in this microvascular disorder. Hence advancing our understanding in the therapeutics of vasospasm has an important role in improving patient outcomes in coronary heart disease.