

Clinical Evaluation of Aspirin, Clopidogrel and Clopidogrel-Aspirin Combination in Cardiovascular Disease

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ABSTRACT

Coactivation of platelets and the blood coagulation cascade contributes to the pathophysiology of antithrombotic effect. Combination of antiplatelet drugs may be needed for maximizing the prevention and treatment of thrombosis. Aspirin inhibits platelets by inhibiting cyclooxygenase and was shown to reduce platelet-dependent thrombin generation, whereas clopidogrel inhibits platelet activity by blocking the platelet ADP receptors. The present study demonstrates that clopidogrel was an effective antithrombotic agent. Further the combination of aspirin and clopidogrel increases antithrombotic effect without increasing bleeding time.

Coronary Artery Disease (CAD) is caused by the buildup of plaque (*i.e.*, excess cholesterol, calcium and other substances that float in blood) on the inside of the coronary arteries that supply oxygen-rich blood to the heart muscle. This buildup causes hardening of the arteries or atherosclerosis and decreases the space through which blood can flow. In turn, poor blood flow to the heart muscle leads to chest pain. A heart attack results when blood flow is completely blocked, usually by a blood clot forming over a plaque that has broken open one.

Transient ischemic attack is a temporary interruption of the blood flow to an area of the brain. TIAs are a warning sign that a stroke may follow within days or months. A clot in an artery, a drop in blood pressure or a change in heart rhythm or rate may all reduce blood flow to the brain and result in a TIA. Symptoms of a TIA are trouble seeing in one or both eyes, difficulty speaking, loss of consciousness, seizures, dizziness and weakness or numbness on one side of the body.

Stroke is a sudden disruption in blood flow to the brain caused by a blockage or bleeding of a blood vessel. Areas of the brain affected by the blockage or bleeding can become damaged within minutes. Stroke is a sudden disruption in blood flow to the brain caused by a blockage or bleeding of a blood vessel. Areas of the brain affected by the blockage or

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Aspirin or acetylsalicylic acid has an elaborate and complex history intricately intertwined with that of pharmacy. The father of modern medicine and pharmacy, Hippocrates (460-377 BC) left historical records of pain relief treatments, including the use of a powder made from the bark and leaves of the willow tree to help heal headaches, pains and fevers. Since this time period aspirin has been used for a multitude of indications ranging from fever to spondyloarthropathies.

A Myocardial Infarction (MI) or Acute Coronary Syndrome (ACS) may occur as a result of erosion and rupture of this fibrous cap. This process typically occurs along the lesion's shoulders, where macrophages enter, accumulate and are activated. Degradation of the fibrous cap results from elaboration of metalloproteinases such as collagenases and elastases. A dual antiplatelet regimen of aspirin and clopidogrel is the standard treatment for the prevention of stent thrombosis (Metha *et al.*, 2001; Steinhubl *et al.*, 2002; Bhatt *et al.*, 2002) and retrospective studies have shown that the discontinuation of clopidogrel, even after 6 months or later after stent implantation, is associated with an increased risk of thrombotic events in patients with drug-eluting stents (DES) (McFaden *et al.*, 2004; Kaiser *et al.*, 2005; Iakovou *et al.*, 2005; Park *et al.*, 2006).

Stent thrombosis also can occur in patients

Key words :

Coronary artery disease or atherosclerosis and Transient ischemic attack

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