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Commentary

Clopidogrel with Aspirin in Acute Minor Stroke or Transient Ischemia Attack: A Scoping Review

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DESCRIPTION

The early risk of recurrence of stroke following index transient ischemic attack (TIA) or minor ischemic stroke is very high, even in patients treated with aspirin. The Clopidogrel in High risk patients with Acute Non-disabling Cerebrovascular Events (CHANCE) trial was designed to assess whether the combination treatment of clopidogrel and aspirin taken soon after a TIA or minor stroke could reduce the early risk of stroke. The original study termination of the CHANCE trial was 90 days from randomization, and the results showed that clopidogrel aspirin treatment decreases the 90 day risk of stroke hazard ratio, 0.68, 95% confidence interval (CI), 0.57–0.81; P<0.001) but does not increase the risk of haemorrhage in comparison with aspirin alone. The secondary prevention strategy with one single antiplatelet drug of clopidogrel or aspirin does reduce, but abolish, further events such as recurrent ischemic stroke. This "resistance phenomenon" suggests that blocking target is far from cutting off the whole thrombotic process. Dual antiplatelet drugs working on various thrombotic targets show higher antithrombotic efficacy. The combination therapy with clopidogrel and aspirin main drug used worldwide and provides definite clinical benefit, which has been the standard practice for acute coronary syndrome.

Acetylsalicylic acid (ASA), otherwise known as aspirin, irreversibly inactivates platelet cyclooxygenase, which is responsible for prostaglandin and thromboxane synthesis. In particular, aspirin irreversibly blocks production of thromboxane A2. Thromboxane A2 is a potent platelet activator and proaggregant; hence by blocking thromboxane A2 synthesis, ASA is able to achieve an antiplatelet effect. Clopidogrel is a thienopyridine compound whose active metabolite selectively inhibits the binding of adenosine diphosphate to its platelet P2Y receptor and the subsequent adenosine diphosphate mediated activation of the glycoprotein (GP) IIb/IIIa complex, thereby inhibiting platelet aggregation. In the acute setting, a loading dose of 300 to 600 mg is administered for more rapid onset of effect.

Transient ischemic attack is defined as a transient episode of neurological dysfunction caused by focal brain, s cord, or retinal ischemia, without acute infarction. High-risk TIA is ABCD score of 4 or more, and minor isch stroke is NIHSS score of 3 or less. Both of them are associated with extremely high risks of stroke recurrenc especially in the initial 48 h after symptom onset, where early secondary prevention is supposed to be crucial elective, but suggested that for patients with TIA or minor stroke, there might be a net benefit for DAPT compared with mono therapy and simvastatin use acutely after stroke might attenuate the antiplatelet effect.

The Clopidogrel in Unstable Angina to Prevent Recurrent Events (CUREs) trial might reveal a net benefit of DAP patients with ACS. The combination therapy greatly reduced the risks of stroke, MI, and vascular death (P<0.0 and significantly increased the risks of major hemorrhage (P<0.01) with no difference in the risk of life threat hemorrhage compared with aspirin. Another recent trial named the Prevention of Cardiovascular Events in Patients with Prior Heart Attack Using Ticagrelor Compared to Placebo on a Background of Aspirin Thromboly Myocardial Infarction 54 (PEGASUS TIMI 54) indicated similar results with the DAPT of a novel P2Y receptor antagonist of ticagrelor and aspirin. These trials greatly favoured the use of DAPT in patients with ischemic s and ACS but relatively low risks of haemorrhage.

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