Inhibición de la función plaquetaria en miocardiopatía aguda y crónica

Platelet function inhibition in acute and chronic cardiomyopathy

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Blood coagulation is pivotal in the pathogenesis of acute vascular disease as shown by the results of a large number of clinical trials on the effectiveness of antiplatelet drugs in vascular disease[1]. Fresh formed thrombi are mainly composed of fibrin and aggregated platelets, vasoactive mediators such as thromboxane A2 released from platelets and may occlude arteries. It has therefore been suggested that antiplatelet drugs like aspirin may be active in the primary prevention and secondary of vascular disease. Indeed, in a retrospective study in patients treated with high-dose aspirin for rheumatoid arthritis the drug seemed to reduce the incidence of myocardial infarction, angina pectoris, sudden death and cerebral infarction[2].

1. Platelet inhibitors in the management of vascular disease

Aspirin in the management of vascular disease has been studied in 16 placebo-controlled trials inclu ding 17,000 individuals at high average risk totaling 43,000 person-years[3]. Aspirin produced an absolute reduction in serious vascular events (6.7% vs 8.2% per year, $p<0.0001$), with a non-significant increase in haemorrhagic stroke but reductions of about a fifth in total stroke (2,1% vs 2.5% per year, $p=0{\cdot}002$) and in coronary events (4.3% vs 5.3% per year, $p<0.0001$). In these secondary prevention trials, the proportional reductions in the aggregate of all serious vascular events seemed similar for men and women[3].

Dual antiplatelet therapy with aspirin and the platelet P2Y12 blocker clopidogrel reduces risk of ischemic events further[4], but causes major bleeding in 125 to 280 patients per 100,00 patients per year. In comparison to clopidogrel the novel P2Y12 blockers ticagrelor and prasugrel are more effective, but further increase the risk of major bleeding further with 25% and 32%, respectively[5,6].

2. Platelet inhibitors in the management of left ventricular failure

In patients with symptomatic heart failure, ische mic heart disease is a major contributor[7]. As mentioned above, antiplatelet therapy is standard of care in secondary prevention of cardiovascular disease, but specific studies on the management of ischemic heart disease complicated by heart failure by antiplatelet therapy are scarce.

2.1. Platelet inhibitors in the management of acute left ventricular failure

To the best of our knowledge, there are no specific studies on by antiplatelet therapy in the management of ischemic heart disease complicated by acute heart failure available. Yet, there have been suggestions that the beneficial effects on angiotensin converting enzyme inhibitors in patients with heart failure would be reduced by concomitant use of aspirin. However, extensive analysis of this issue did not suggest a detrimental effect of aspirin use in the large trials of angiotensin converting enzyme inhibitors in patients with heart failure[8].

2.2. Platelet inhibitors in the management of chronic left ventricular failure

Patients with heart failure without atrial fibrillation run a significant risk of stroke, partially because of thromboembolism from their dilated left ventricle[9]. Therefore, routine antithrombotic therapy has the potential to prevent stroke in dilated cardiomyopathy. Given the low flow state in the dilated heart ventricle, oral anticoagulation would be a logical strategy, but there is only one placebo-controlled trial on aspirin for the management of heart failure. In the WASH trial 190 patients with heart failure and proven coronary disease in 65% were randomized to aspirin or no treatment[10]. After 27 months of follow-up there were 2 strokes in the aspirin group and 2 in the control arm. Rehospitalisation was more common on aspirin (64%) than without (48%, p = 0.03). Of course, these figures are too small for definite conclusions. There are more data on warfarin in this condition and they are all randomized aspirin-controlled[11]. In an updated meta-analysis on antithrombotics in heart failure in 3,701 patients without atrial fibrillation, including warfarin proved more effective in stroke prevention than aspirin[11], but at the cost of a higher rate of major extracranial bleeding (**Figures 1 and 2**). Intracranial bleeding was also increased by warfarin (0.6%) compared to aspirin (0.3%, p = 0.14).

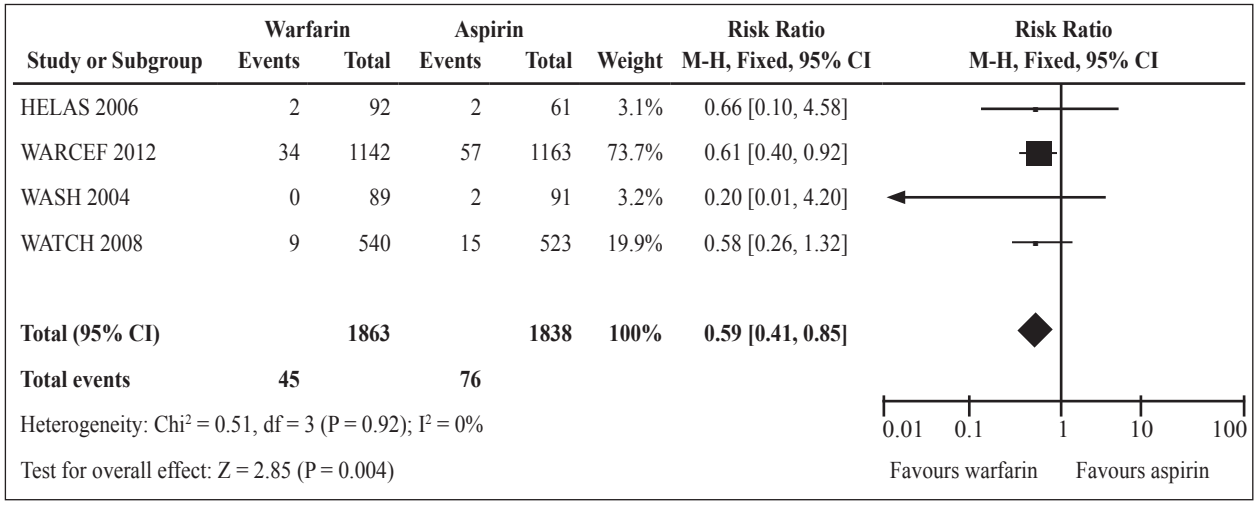

Figure 1. *Total stroke rate in a meta-analysis of randomized trials of antithrombotic strategies in patients with heart failure without atrial fibrillation[11]. Reproduced with permission pending.*

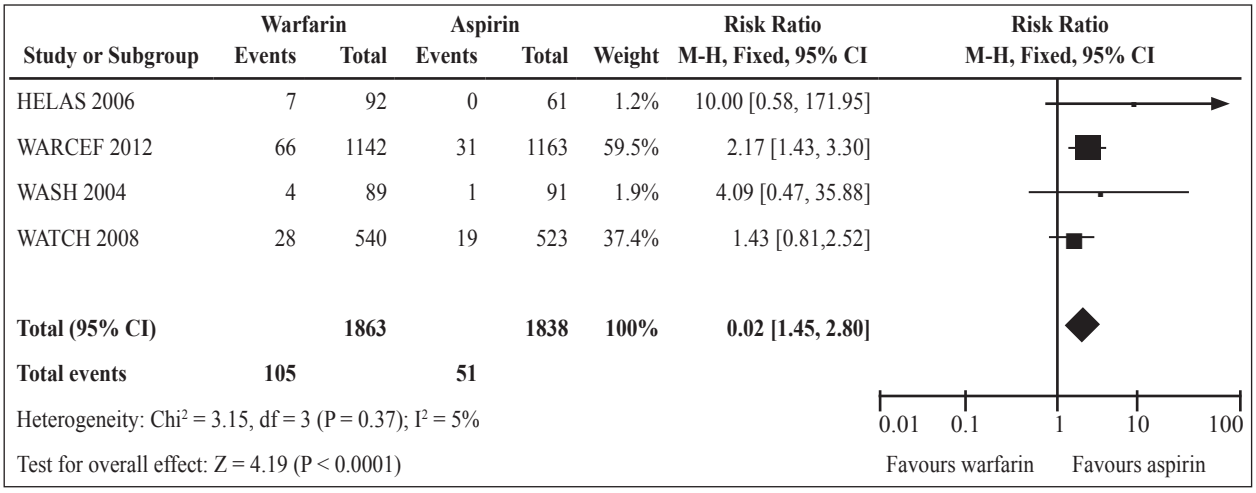

Figure 2. *Major bleeding in a meta-analysis of randomized trials of antithrombotic strategies in patients with heart failure without atrial fibrillation[11]. Reproduced with permission pending.*

Conclusion

Antiplatelet agents are effective in secondary prevention of vascular disease, but do not seem to confer an extra benefit in the management of acute or chronic ischemic cardiomyopathy in comparison to no antiplatelet therapy. Furthermore, in these conditions they are also not an alternative to oral anticoagulants, which do reduce the stroke rate but at the cost of excessive bleeding including haemorrhagic stroke when compared to aspirin.

Declaración de conflictos de interés:
El autor declara haber recibido honorarios por parte de Bayer HealthCare, AstraZeneca y Eli Lilly en concepto de conferencias y actividades educativas en las que ha participado.

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