Aspirin for primary prevention of cardiovascular disease?

Aspirin is recommended for the prevention of cardiovascular disease in people at risk.[1,2] This includes those who have previously had a cardiovascular event (i.e. secondary prevention) and those with no history of cardiovascular disease (CVD) but who are at increased risk (i.e. primary prevention).

While the benefit of aspirin therapy for secondary prevention substantially outweighs the risk of harm such as increased risk of major bleeding, the balance of risk versus harm for primary prevention is less clear.

Recent papers have questioned the place of aspirin in primary prevention

Antithrombotic Trialists' (ATT) Collaboration

A recent meta-analysis of trials involving 95,000 participants investigated aspirin for the primary and secondary prevention of CVD.[3]

For primary prevention, aspirin was found to reduce serious vascular events by 0.07% per year compared with no aspirin, mainly due to a 0.05% reduction in non-fatal myocardial infarction. However aspirin significantly increased major gastrointestinal and other extracranial bleeds (0.1% per year with aspirin compared to 0.07% per year without aspirin).[3]

For secondary prevention, aspirin yielded a greater absolute reduction in serious vascular events (6.7% vs 8.2% per year) and had a similar effect on major bleeds as seen in primary prevention.[3]

The researchers concluded that when using aspirin for primary prevention, the absolute reduction in serious cardiovascular events is likely to be small, and is expected to be at least partially offset by a small increase in serious bleeds. They also stated that current evidence does not seem to support the routine use of aspirin in apparently healthy individuals with a more than moderate risk of CVD.[3]

Aspirin for Asymptomatic Atherosclerosis (AAA) study

Participants recruited for this study were asymptomatic but at risk of CVD as measured by ankle brachial index (ABI - the ratio of systolic pressure at the ankle to that of the arm).[4]

There was no significant difference in the rate of initial coronary event or stroke or revascularisation between those allocated aspirin or placebo. However major haemorrhage requiring hospital admission occurred in 34 patients taking aspirin compared to 20 in the placebo group.[4]

Researchers concluded that their findings do not support the routine use of aspirin for the prevention of vascular events in persons with a low ABI and no known cardiovascular disease.[4]

Aspirin for primary prevention of CVD in people with diabetes

This meta-analysis investigated aspirin for patients with diabetes and no pre-existing cardiovascular disease.[5]

When aspirin was compared to placebo there was no statistically significant reduction in the risk of major cardiovascular events, cardiovascular mortality, or all cause mortality.[5]

Researchers concluded that a clear benefit of aspirin in the primary prevention of major cardiovascular events in people with diabetes remains unproven.[5]

Drug and therapeutics bulletin review of aspirin in primary prevention

The November 2009 issue of the Drug and Therapeutics Bulletin contained a review of aspirin's place in the

primary prevention of CVD. They concluded that the current evidence does not justify the routine use of low-dose aspirin, for the primary prevention of CVD in apparently healthy individuals, because of the potential risk of serious bleeds and the lack of effect on mortality. This also included those with elevated blood pressure or diabetes.[6,7]

They advised that low-dose aspirin should not be routinely initiated for primary prevention. And for those already taking it for primary prevention, either as prescribed or over-the-counter treatment, the decision to stop or continue treatment should be made with patients after fully informing them of the available evidence.[7]

ACKNOWLEDGEMENT: Thank you to **Associate Professor Michael Williams**, Cardiologist, Otago DHB for expert guidance in developing this article.

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How does this change practice in New Zealand?

The New Zealand Cardiovascular Guidelines recommend commencing low dose aspirin as secondary prevention in those with clinical CVD and stroke or TIA and as primary prevention for those with a five year CVD risk greater than 15%.[1]

The advice in regards to secondary prevention remains unchanged. However findings from the recent studies have changed the advice for primary prevention.

Primary prevention with aspirin therapy does not now appear justified in the majority of people with cardiovascular risk factors given the uncertain net absolute benefits.[1]

Statins should be considered as first line therapy for primary prevention in those at moderate or high CVD risk given the significantly improved survival and large reductions in major CVD events.[8] There appears to be no benefit in adding aspirin to statin-based primary prevention, because any improvement in cardiac morbidity is offset by the increased risk of a major bleed.[3]

Patients without clinical CVD who have commenced themselves on over-the-counter aspirin, are often unaware of the risk of bleeding and should be advised to discontinue treatment.

Reconsider paracetamol use post-vaccination

Fever can be part of the normal inflammatory process after immunisation. Prophylactic paracetamol use is sometimes recommended. Recent research has questioned this practice.[1]

Two trials have demonstrated that giving paracetamol to infants after routine vaccinations lessened the effectiveness of the immunisation. The trials studied infants receiving their primary immunisations (at age three to five months) and booster immunisations (at age 12 to 15 months). The vaccines used in routine immunisations included haemophilus influenza, diphtheria, tetanus, pertussis, polio and hepatitis B.

459 infants were either given paracetamol every six to eight hours in the 24 hours following their injection or were given none (the control group) and their immune response and febrile reactions recorded.

Paracetamol was successful in reducing the risk of fever developing, however it also reduced the immune response to the vaccine, raising concern that the effectiveness of the vaccine may be reduced.

Although the prophylactic use of paracetamol brought about a reduction in immune response, using it once a fever developed did not appear to have the same effect. This means that parents or caregivers should not be concerned about giving paracetamol to treat a raised temperature, or associated pain and irritability, should it develop post-immunisation.

The researchers concluded that although feverish reactions were significantly decreased by the use of paracetamol, prophylactic administration of it should not be routinely recommended since antibody responses to several vaccines were reduced.

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Do you have a brilliant idea that you would like to share with your colleagues? Can you tell us about a mistake that you have learnt from so others don't fall into the same trap? What's new in primary care that people would want to know? Share your practice tips with us. Email: **editor@bpac.org.nz**