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Aspirin and acute myocardial infarction: clarifying the message

IT is now well established that aspirin has an important role in the treatment of acute myocardial infarction.[1,2] However, publications have misleadingly stated that the benefits of aspirin therapy are 'a 25% reduction in mortality when 160 mg aspirin was given within the first four hours [of an acute myocardial infarction]'[3] and 'in connection with the use of 150 mg or more being chewed at the time of the acute [myocardial infarction] event'.[4] There are two misconceptions which seem to have arisen in these interpretations of the research findings.[3-5] First, that administering a single aspirin tablet soon after the onset of acute myocardial infarction will lead to a substantial reduction in the risk of death, and secondly, that any delay in the commencement of aspirin therapy will lead to a reduction in its effectiveness. Close scrutiny of the relevant randomized controlled trials suggests that there is no evidence supporting either of these interpretations.

The second international study of infarct survival (ISIS-2) provides evidence of the effectiveness of both aspirin and streptokinase in over 17 000 patients who were randomized on admission to hospital to receive placebo, 160 mg of aspirin daily for four weeks, a one-hour infusion of streptokinase as immediate care or the combination of aspirin and streptokinase.[1] The trial reported statistically and clinically significant reductions in 35-day vascular mortality rates (deaths which were definitely or possibly of a vascular cause) with the aspirin and streptokinase combination compared with either treatment alone, and with either treatment compared with placebo. The fact that the effects of thrombolytic therapy and aspirin therapy were found to be additive suggests that they may act in different ways. Thrombolytic therapy reopens occluded arteries and antiplatelet (aspirin) therapy may perform a complementary role by inhibiting cyclo-oxygenase–platelet activity and preventing further thrombus formation.[6] The exact mechanism by which aspirin exerts its influence is unclear.

There is strong evidence that the effectiveness of thrombolytic therapy depends on the prompt administration of the single infusion, and that its effectiveness reduces with delay.[1,7] Studies have been published that examine the time taken for patients to receive thrombolysis[8,9] and the practicalities and safety of its administration in general practice;[10,11] guidelines have been outlined[12,13] and local policies adopted in attempts to reduce delays.[10]

The policy regarding aspirin therapy should differ from that for thrombolytic therapy. The 23% reduction in the risk of vascular death in the 35 days following myocardial infarction seen in the aspirin treatment arms of ISIS-2 was associated with a four-week course of aspirin and not a single tablet.[1] Research has failed to indicate that administration of a single aspirin tablet at the time of acute myocardial infarction leads to any reduction in mortality.[14] Guidelines on the use of aspirin must reflect the importance of continuing the use of aspirin therapy as a secondary preventive measure,[2] as well as ensuring that aspirin therapy is commenced.

It has also been noted that the participants in ISIS-2 who incurred up to 24 hours' delay in commencing aspirin therapy fared no worse than those who received their first tablet within the first few hours after the onset of symptoms.[15] This contrasts with the findings for thrombolytic therapy. Although the evidence suggests that the commencement of aspirin therapy may not merit the same degree of urgency as commencement of thrombolytic therapy, there is no reason to introduce any delay in its administration, given its relative safety and the ease of administration.[14]

It is unfortunate that several studies assessing the quality of care that general practitioners administer to patients with suspected myocardial infarction have concentrated on assessing the commencement[3-5] rather than the continuation[16] of aspirin therapy. These studies may in part be responsible for disseminating the wrong treatment message. A first requirement of a study which assesses clinical performance is that the procedure under question is of established effectiveness.[17] These studies misinterpret the results of ISIS-2 by wrongly attributing the mortality reduction to the initial aspirin administration.[3-5] It is essential that time is taken to appraise critically and interpret correctly the results of the relevant clinical trials before reviews of performance are undertaken.

Putting the evidence of the treatment of patients with suspected acute myocardial infarction into practice is probably best

done as part of locally developed guidelines which are actively disseminated, reflect local circumstances, such as the additional barriers to immediate treatment in rural settings,[10] and involve all relevant professionals in both primary and secondary care.[18] In the absence of district-wide guidelines, general practitioners should agree general practice based policies or guidelines. These should reflect the correct interpretation of the research evidence, and should be used to ensure that all patients with a potential to benefit from thrombolysis and aspirin therapy are given the opportunity to do so. A recent publication, *Effectiveness Matters,*[19] has been distributed to all general practitioners in the United Kingdom and summarizes the relevant research; this could be used as the basis of such guidelines.

In the absence of any district or practice guidelines all health professionals coming into contact with a patient within the first 24 hours after the patient has had a suspected myocardial infarction should make it their responsibility to check whether at least 150 mg aspirin has been given, and commence treatment if it has not. Given the weight of the evidence, all eligible patients should receive aspirin and thrombolytics during the acute phase. Although hospital doctors are responsible for providing aspirin therapy during the inpatient stay, the responsibility for ensuring that aspirin therapy is continued both beyond the acute period and the first month lies with the general practitioner. If these policies are widely implemented, the large benefits anticipated in rigorous research may be achieved in practice.

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Family practice in the United States of America — a new dawn?

IN recent years family medicine in the United States of America has become the poor relation of a technology-driven medical establishment. Graduates from medical school, hampered by large loans and attracted by the high earnings and prestige of specialist medicine, have rejected family medicine as a career. In 1994 federal health care reform temporarily threatened to overcome the reign of the specialist physician and restore the self-esteem of primary care physicians in the health care system. However, despite the failure of congress to pass health reform legislation, the American health system is steadily undergoing market-based evolution. This evolution is having a profound effect on the work and careers of family physicians, and results from the fact that an increasing number of consumers in the USA are leaving traditional fee for service medicine for a new form of health service delivery, managed care.

Managed care is the provision of complete primary and secondary care for a fixed fee each year. Patients use the primary care physician as their point of contact; there is therefore a care co-ordinator or gatekeeper, unlike fee for service insurance schemes where patients can refer themselves to the specialist of their choice. The managed care organizations, or health maintenance organizations, are paid by capitation for the delivery of services