**EDITORIAL**

**On the potential contribution of aspirin to healthy ageing programmes**

**Is the current ad hoc system leading to an intractable public health failure?**

Following myocardial infarction or ischaemic stroke, aspirin is often part of a package of measures to reduce the risk of subsequent vascular events [1]. In this context, the use of aspirin is therapeutic as part of the ongoing treatment of underlying atherosclerotic disease. The ongoing treatment of existing disease, however, can be distinct to the preservation of health. The former is often provided by healthcare services while the latter includes personal responsibility for self-care. Perhaps a balance of access to healthcare and personal self-care may be needed as part of healthy ageing programmes.

But what is healthy ageing? This is difficult to answer, not least because the term ‘health’ *per se* lacks a universally accepted definition [2]. Given this fundamental question, perhaps it is more helpful to consider healthy ageing, at least in part, as one natural consequence of reducing the risk of disease.

There are many ways to reduce the risk of disease. For example, there are approaches that are delivered by healthcare staff, such as vaccination programmes. Lifestyle and behaviour are also important, such as the level of alcohol consumption. Sometimes, numerous approaches to a single disease risk factor can be employed, for example smoking cessation can, respectively, combine nicotine replacement therapy with personal motivation. So reducing the risk of disease, which in everyday parlance may be termed healthy ageing, can combine evidence-based interventions with lifestyle choices. However, although there is evidence on the relationship between disease risk factors and life expectancy [3], converting this and other evidence into effective policy remains a challenge [4]. It has been suggested that the prevention agenda might only be properly progressed when Government, policy makers, public health services and the people collaborate in a ‘fully engaged’ way [5].

A related consideration, which illustrates some of the complexity, is that there are different organisations with vested interests in the factors that influence disease risk. For example, in the case of alcohol this includes Governments, the brewery industry, individual consumers and agencies who offer services to those adversely affected from the problems associated with excess drinking. Such a range of stakeholders may lead to mixed messages being delivered. Many questions arise. What are the roles and responsibilities of the media in disseminating information? Will there ever be an integrated and widely agreed approach to healthy ageing? If so, is it affordable to deliver it?

It is against this complex background, with many uncertainties, that the potential of aspirin may be considered. There is evidence relating to the use of the medicine on age grounds. The risk of vascular events increases with age and perhaps aspirin use could be considered by about the age of 50 [6, 7].

Reasonable objections to the use of aspirin on age grounds for the primary prevention of vascular events include concerns about undesirable effects, most notably bleeding [8]. Some of these effects may have a serious clinical impact, such as a significant increased risk of haemorrhagic stroke [9].

Another objection is that recent primary prevention trials, for example in patients with type 2 diabetes mellitus [10, 11], have failed to demonstrate a clear overall benefit from aspirin. Furthermore, some individuals might be resistant to the effects of aspirin. Therefore in primary prevention, the number of vascular events avoided and bleeds caused by aspirin might be equivocal, both in terms of numbers and clinical significance. Of course, the aspirin failures, namely those taking the medicine experiencing a vascular event or bleed, are visible. Such failure visibility may lead to negative perceptions. Of course, this invites the question of what constitutes a ‘failure’. A vascular event may have been delayed and in healthy ageing that is also important.

The evidence that aspirin also reduces risk of several cancers is a further factor to be considered. Aspirin chemoprevention of cancer, however, may take many years of continuous use [12]. Whether individuals will adhere to such a long-term regime is unclear, especially given the concerns of visible failure.

The potential contribution of aspirin to healthy ageing programmes raises both specific and general questions. To consider one specific question, how does the evidence on aspirin and cancer chemoprevention influence the overall benefit versus risk assessment? This is not an easy question to answer given that each individual judgement on the benefit versus risk may vary. In addition, uncertainties and questions remain about optimum dose, duration and frequency of aspirin prophylaxis [13] and the age to start use. For vascular disease, 75–15 mg per day is typically used, with higher doses having equal efficacy and more
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undesirable effects. For vascular disease, the optimal dose is established as 75–81 mg per day [14]. For cancer chemoprevention, studies suggest the benefit might be dose dependent. As for age of starting use, might this be optimal in our 40 s when sporadic cancer is at an early stage?

Is taking no action on the public health potential of aspirin an ethical option? There is evidence that about one-quarter of older adults over the age of 50 are already self-medicating with aspirin [15]. There also appears to be a desire from the general public for the role of aspirin in reducing the risk of age-related diseases to be given further clarification through a health education campaign on the benefits and risks of the medicine [16]. Such a campaign may be further warranted on the basis that the media are already bringing information on aspirin into the public domain but with varying accuracy. Any influence of media coverage on aspirin use in the general public is unknown.

Another question is how might aspirin contribute to healthy ageing programmes? Again, this is a difficult question to answer, not least because both the provision [17] and uptake [18] of healthy ageing programmes, however they may be defined, is variable. To introduce another intervention into this situation may cause unintended consequences. For example, individuals might take aspirin and continue to smoke because of their perception that the former might compensate for the latter. Furthermore, the increased use of aspirin might put considerable pressure on health services due to bleeding [19].

The age of the population is increasing and perhaps wider aspirin use could help avoid much disease, disability and death. Aspirin is inexpensive, easily obtained and widely used yet in some individuals, undesirable effects will occur. Although uncertainties remain, the use of aspirin as part of healthy ageing programmes could complement cancer screening, vaccination, healthy eating and diet, exercise, moderate alcohol intake and smoking cessation.

Current recommendations on the use of aspirin for primary prevention focus on vascular events where the benefit versus risk balance is clearly favourable. For example, the US Preventive Services Task Force (USPSTF) [20] recommends the use of aspirin in men 45–79 years of age when the potential benefit of a reduction in myocardial infarctions outweighs the potential harm of an increase in gastrointestinal haemorrhage. The USPSTF also recommends the use of aspirin in women 55–79 years of age when the potential benefit of a reduction in ischaemic strokes outweighs the potential harm of an increase in gastrointestinal haemorrhage. Further trials are also being undertaken, for example Aspirin in Reducing Events in the Elderly (ASPREE) is considering the benefit risk balance in people aged 70+ years [21].

In due course, perhaps the development of a healthy ageing leaflet, which may include aspirin, could offer an integrated and holistic approach to reduce the risk of several diseases, leading to significant public health benefits. Such a holistic approach could offer clear, consistent messages on healthy ageing, empower older people to make informed choices and minimise the impact of the mixed messages that are sometimes delivered by the media. So by considering the potential contribution of aspirin to healthy ageing programmes, some underpinning and deep-rooted problems become evident. Unless there is a more systematic approach, the current ad hoc system may continue, potentially leading to an intractable public health failure. Although the development of a healthy ageing leaflet, which might be adapted to specific country policy circumstances, per se will not resolve all the problems, it may be a helpful step towards a more systematic and measurable approach.

Conflicts of interest

None declared.

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