NSAIDs: risks and benefits

MORE THAN 30 million people worldwide take aspirin or non-aspirin nonsteroidal anti-inflammatory drugs (NSAIDs) every day. The popularity of these drugs has increased with their over-the-counter availability and media coverage of aspirin's role in preventing cardiovascular disease and cancer. But evidence about the benefits of aspirin is of variable quality and the risks associated with prophylactic use are being more widely acknowledged.

At the same time, non-aspirin NSAIDs have a worsening reputation for cardiovascular risk. How do these drugs act to provide pain relief and reduce inflammation? And how does this relate to their other preventive or harmful effects? Do the benefits outweigh risks associated with their use?

Understanding the actions of these drugs allows nurses to identify risk of adverse reactions in their patients. It also enhances their ability to educate patients, especially those using over-the-counter aspirin or NSAIDs in combination with other medications, or who are self-medicating to try to reduce disease

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PHOTOS: ADOBE STOCK

INTRODUCTION

Bitter-tasting extracts from willow leaves and bark have been used since ancient times to manage inflammation, pain and fever.[1] In the 19th century, the active ingredient of willow – salicin – was isolated and purified into salicylic acid. In 1897, Bayer, a German pharmaceutical company, manufactured acetylsalicylic acid (ASA) as a pure, stable and cheap formulation of the drug, and gave it the brand name Aspirin.[1] It was the first drug available in tablet form worldwide. Bayer lost the trademark to aspirin as part of reparations at the end of World War I, which is why aspirin is now a generic name for the drug. Worldwide, the equivalent of 100 billion standard aspirin tablets are manufactured each year and 30 million people take nonsteroidal anti-inflammatory drugs (NSAIDs), including aspirin, every day.[2,3]

The discovery, in the 1970s, of the molecular target for aspirin – the cyclo-oxygenase enzymes – led to an explosion of similar-acting drugs. With more than 50 different types of NSAIDs on the market, these are the most commonly used drugs globally.[4] Aspirin is now less often used for its analgesic and anti-inflammatory effects. It regained popularity when, in 1980, a meta-analysis of clinical trials showed it reduced the risk of secondary heart attack by 21 per cent. By 1985, the evidence was sufficient to recommend that aspirin be used in the treatment and secondary prevention of myocardial infarction. In the 1990s, aspirin's efficacy in reducing risk of stroke was also recognised.[1]

Aspirin is seen by some (health professionals and the public) as a potential wonder drug. However, aspirin and other NSAIDs have significant adverse effects that are a natural extension of their

LEARNING OUTCOMES

After completing this activity, you should be able to:

- Describe the actions of aspirin and non-aspirin NSAIDs.
- Discuss key adverse effects of aspirin and NSAIDs.
- Outline the role of aspirin in disease prevention.
- Discuss the risks and benefits of low-dose aspirin.