**Aspirin can protect against cancer - and treat it, according to new research**

Aspirin is already used by millions to reduce the risk of heart attacks and strokes. But the latest research suggests that the drug could also have a major role in treating and preventing cancer. Cheap and safe, it is the nearest we have to a wonder drug, says Jeremy Laurance. So, should we all be taking it?

If any medicine can lay claim to the title “miracle drug”, it is surely aspirin. It may be known as an everyday painkiller, largely replaced today by the modern upstarts paracetamol and ibuprofen, but the range of its effects is astonishing. And our understanding of them is still growing, more than 100 years after it was discovered.

Millions of people around the world take aspirin daily to protect against heart attacks and strokes. Aspirin thins the blood, making it harder to form clots, helping to prevent blockages in the blood vessels. It protects against diabetes, dementia and pregnancy complications (pre-eclampsia), its anti-clotting effect proving beneficial both at the end of life and the beginning, as well as reducing pain. But the big news in recent years has been its role in cancer.

In a study presented in Vienna this week, Dutch researchers reported that a daily aspirin could double the life expectancy of patients with gastro-intestinal cancers – of the oesophagus, stomach and colon. Among the 14,000 cancer patients studied, regular users of the drug were twice as likely to be alive after four years as those who were not taking it.

Aspirin is already known to protect against these cancers. Now, evidence is growing that it has a role in treatment as well. Should, then, we all be on it? If a drug that has been around for so long and has been so widely used turns out not only to cut heart attacks and strokes, but also to prevent and improve survival from several major cancers – the major killers of our time – then why not give it to everyone?

Aspirin can fairly claim to be one of the broadest spectrum medicines ever discovered – a potent anti-cancer agent, heart drug, fertility promoter and cognitive enhancer, as well as reducing aches and pains and easing fevers in diseases such as flu. It may not yet be a panacea for all ills – but it is coming close.

Martine Frouws of Leiden University in the Netherlands, who presented the latest findings on cancer to the European Cancer Congress, said the challenge now was to identify the patients who could benefit most. “Given that aspirin is a cheap, off-patent drug with relatively few side-effects, this will have a great impact on healthcare systems as well as patients.” Her study is one of dozens that have shown similar effects. Taken together, they suggest aspirin offers a new line of defence against disease.

When it comes to prevention, the standard message on both cancer and heart disease has been to change our lifestyles – stop smoking, reduce drinking, exercise more, eat better – but with little effect. Now, it appears that an aspirin a day might achieve what years of health education has failed to deliver.

In the US, the Preventive Services Task Force is working on recommendations for the use of aspirin to reduce cancer risk. In the UK, the National Institute for Health and Care Excellence (Nice) decided against a formal assessment on the grounds that several major trials are due to report in the coming years. Its decision, which disappointed some researchers, begs the question: why we are still waiting for evidence of aspirin's effects, more than 100 years after the German pharmaceutical company Bayer first marketed the drug in 1899?

In part, the answer is a lack of funding. Aspirin is long out of patent, and although Bayer still makes a few hundred million pounds annually from the drug, and supports research, there is no billion-dollar bonanza in prospect of the kind necessary to persuade pharmaceutical companies to stump up the vast sums needed for trials. Most of those that have been run have been publicly funded and progress has been slow.

But there is a second reason – a lack of interest from funders and researchers in the clinical end of cancer prevention. The vast majority of laboratory-based research has focused on cancer treatment – developing the drugs that cost tens of thousands per patient and buy a few extra months of life. Research on prevention has focused on measures such as stopping smoking and improving screening. There has been less interest in chemo-prevention.

Despite the difficulties, the evidence has been building. Overall, the research suggests that a daily low dose (75mg) aspirin taken for at least five years in middle age can reduce the risk of developing gastro-intestinal cancers (of the oesophagus, stomach and colon) by around 20 per cent. It also protects against other cancers such as breast, lung and prostate, but the reduction in risk is less pronounced.

As a treatment, it may be even more powerful. A review of eight large randomised controlled trials – the gold standard of medical research and stronger evidence than Dr Frouws' “observational” study – involving 25,000 patients taking a low daily dose of aspirin to ward off heart disease – found the drug reduced deaths due to all cancers by more than a fifth (21 per cent).

Published in The Lancet in 2011, that review was followed by a second one, published in 2012, of five randomised trials, which found that patients with cancer taking a daily aspirin reduced “distant metastasis” – spread to organs such as the brain, liver and lungs, which is usually terminal – by 30-40 per cent. If a new medicine were launched tomorrow with a similar sized effect, it would be hailed as a breakthrough. But instead of being priced at tens of thousands of pounds, aspirin costs 1p a tablet.

Peter Rothwell, Professor of neurology at Oxford University and doyen of aspirin researchers, who conducted both reviews, said this was powerful evidence. Aspirin can halt cancer's remorseless march through the body (though it does not prevent local spread). And not just specific cancers but any cancer.

The drug appears to work by making the platelets, one of the constituents of the blood, less “sticky”. As a cancer grows, cells break off and are carried round the body in the blood by the platelets until deposited in a distant organ, where they form a new tumour. By reducing the platelets' stickiness, aspirin makes it harder for them to carry and distribute the cancer cells.

The message was unequivocal. If you take aspirin daily, perhaps because you have a history of heart disease, and you are unlucky enough to develop cancer, you should continue taking the drug. “If you happen to develop cancer while taking a daily aspirin, you shouldn't stop it,” Professor Rothwell said. “You are substantially less likely to suffer metastasis. But we are not absolutely sure it is worth starting aspirin after developing cancer.”

http://www.independent.co.uk/life-style/health-and-families/features/aspirin-can-protect-against-cancer-and-treat-it-according-to-new-research-a6676056.html