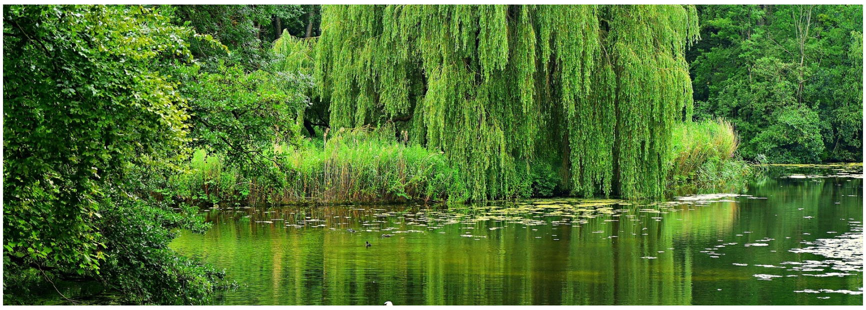
ASPIRIN COULD HELP IMPROVE CANCER TREATMENT

Aspirin is a well known medicine that is easily available and inexpensive. Research evidence suggests:

- It delays the spread of cancer to other parts of the body
- It reduces the risk of vascular complications of cancer
- It appears to prolong the survival of patients with cancer



A WILLOW TREE – THE ORIGINAL SOURCE OF ASPIRIN

Sixty-six years ago, aspirin was first shown to reduce the spread of cancer and the development of metastatic tumours. This is important because an 'early' diagnosis of cancer is associated with a better outcome, and aspirin increases the duration of the early stage (Phase I) of the disease.

Fifty years ago, aspirin was shown to be associated with the reduction of deaths from heart attack and other vascular disease events. This is important because research has shown that about 10% of deaths of cancer patients are due to vascular disease events.

During about the past 20 years many studies of patients with cancer have shown that the survival of patients with cancer is increased by taking low-dose aspirin. For example, a recent research study, which included about 240,000 patients with a wide range of different cancers who were already taking aspirin for protection against a heart attack, experienced an average survival about 20% longer than that of patients in the same study who were not taking aspirin.

As with all medicines, aspirin carries risks of undesirable side-effects, the most important being bleeding. One or two patients in every thousand taking aspirin may experience a bleed, most often from the stomach or intestine. Such a bleed is a crisis! However, whether or not aspirin is being taken, similar bleeds can occur due to an ulcer or an infection in the stomach and these bleeds can be very severe and can lead to death. However, bleeds which are truly attributable to aspirin appear to be much less serious and very rarely lead to death.

A very rare event is a bleed causing a haemorrhagic stroke – perhaps one in ten thousand patients. A high blood pressure is a major cause and appropriate management of blood pressure -if raised– appears to remove this risk.

Underlying all this are the ways that aspirin works – that is, the effects of aspirin upon cellular and other biological mechanisms of cancer within the body. Intensive research has led to an understanding of these mechanisms and of their importance to the clinical outcomes of cancer, and - as one researcher expressed it - the biological effect of aspirin give a reasonable basis for one to predict the observed the clinical benefits which have been repeatedly observed!

THE PUBLISHED SCIENTIFIC EVIDENCE

The safety of aspirin:

Recent research however has shown that the bleeds caused by aspirin are much less serious than the bleeds which occur from stomach ulcers or a stomach infection, and are rarely – *if ever* - fatal.

SEE: Systematic review and meta-analysis of randomized trials to ascertain fatal gastrointestinal bleeding events attributable to preventive low-dose aspirin: No evidence of increased risk, 'Public Library of Science' (PLOS) 2016 http://dx.doi.org/10.1371/journal.pone.0166166

The actions of aspirin on cancer:

Aspirin has effects upon a range of cellular and biological mechanisms in cancer, including cancer growth, metastatic spread to other organs in the body, the thrombotic complications of cancer, and cancer death.

SEE: Aspirin and cancer: biological mechanisms and clinical outcomes' Royal Society *Open Biology* 2022. DOI: 10.1098/rsob.22.0124 https://doi.org/10.1098/rsob.220124

Aspirin and the benefits of 'early' diagnosis:

An 'early' cancer means that the cancer has not spread beyond the site of its origin to any other organ of the body. This is of importance because the 'satellite' growths are responsible for much of the pain and complications of cancer, and many of the deaths are attributable to the metastases.

SEE: Preserving the benefits of an early diagnosis with aspirin. Chatting to the king about cancer https://www.bmj.com/content/384/bmj.q342

Aspirin and survival in cancer:

An observational research study based upon all the available published studies of deaths in patients with cancer, showed that the survival of 250,000 patients who were taking aspirin was about 20% longer than the survival of patients not taking aspirin. The average increase im survival with aspirin in a range of less common cancers was similar to that in bowel cancer.

SEE: Aspirin and cancer survival: a systematic review and meta-analyses of 118 observational studies of aspirin and 18 cancers. Published in an 'online journal: eCancer 2021;15:1258

An overview of the whole topic:

SEE: Aspirin and cancer treatment: systematic reviews and meta-analyses of evidence: for and against. *British Journal of cancer* (2023). https://doi.org/10.1038/s41416-023-02506-5.

Continuing Research:

The main weakness in the evidence on aspirin and cancer, is that very few randomised trials have been conducted and the results of those which have reported are inconsistent. Randomised trials are accepted as the 'gold standard in medical research and further trials are in progress. However it will be some years before any of these will report results, and in the meantime……..

> *……given the relative safety and the favourable effects of aspirin, its use in cancer seems justified, and ethical implications of this imply that cancer patients should be informed of the present evidence and encouraged to raise the topic of aspirin with their healthcare team.*

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Compiled by Dr Gareth Morgan, Professor Peter Elwood

and members of the Welsh Aspirin Group in Cardiff University.

A link to a major presentation of the complete evidence on aspirin and cancer is:

www.welshaspiringroup.org