

Clinical study rejects cancer safety fears of most common heartburn treatment

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Fears about the cancer causing effects of the second most prescribed group of drugs in the Western world have been put to rest, following the largest ever study into their use.

'Proton pump inhibitors' (PPI) are the most commonly used treatment for chronic acid reflux, or 'heartburn', a painful burning sensation in the chest, neck and throat which is experienced by almost a third of people in developed countries.

Regular and prolonged heartburn is known to cause 'benign oesophagitis', a reversible inflammation of the gullet. However if left untreated a condition called Barrett's Oesophagus (BE) occurs in around 10 per cent of sufferers, which can in turn develop into a potentially fatal cancer called oesophageal adenocarcinoma.

BE is twice as common in the UK as it is in the USA, and oesophageal cancer rates in the UK are the highest in the world; up to four times more common than in other European countries.

Despite their excellent safety record, it was unclear if long-term use of PPIs to reduce the discomfort of heartburn could increase the risk of developing either BE or the spread of the associated cancer.

New research carried out at Queen Mary, University of London and Leicester Royal Infirmary, has given the most conclusive evidence yet that this is not the case. The work is published in the peer reviewed

journal *Gut*.

Professor Janusz Jankowski, who co-authored the study, said: "This is one of the most detailed studies investigating both the laboratory and clinical side of [proton pump inhibitor](#) drugs. As a consequence we are now better able to inform patients of the good benefit/risk ratio of this commonly prescribed therapy."

Tests carried out during the two-year study looked at tissue sampled from the oesophagus lining of ninety volunteers, each of whom were given PPI drugs at either a high or low dosage. Researchers found there was no difference in the rate at which BE developed, neither was there a change in the number of precancerous cells in either group.

While there had also been fears about how the treatments might affect people already suffering from BE, the study also showed that there was no evidence that this led to any worsening of the condition or any extra incidences of cancer.

BE is marked by changes in the cells of the oesophagus lining (squamous epithelium) that makes them more like the cells of the intestines (columnar epithelium). As well as increasing the risk of oesophageal cancer, the condition narrows the oesophagus and patients can experience pain whilst swallowing. The chance of [cancer](#) developing is proportional to the length of BE.

PPIs work by blocking the action of gastrin, a hormone that controls acid levels in the stomach, and is known to increase the normal movement of cells in the gastro-intestinal tract. Since PPI therapy increases the levels of gastrin in the body, it had been thought this could cause expansion of BE affected tissue, but this was not found to be the case: the scientists observed neither expansion or contraction of the abnormal tissue. This is concordant with current UK practice, where PPI therapy is currently

only licensed to treat heartburn and 'oesophagitis' but not BE.

More information: 'Long term proton pump induced hypergastrinaemia does induce lineage-specific restitution but not clonal expansion in benign Barrett's Oesophagus in vivo'; [doi:10.1136/gut.2009.186775](https://doi.org/10.1136/gut.2009.186775)

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