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KIDNEY CANCER

Long-term use of nonaspirin NSAIDs increases RCC risk

Analgesic medications are widely used, with aspirin, acetominophen and ibuprofen representing the three most commonly used prescription and over-the-counter drugs. In fact, a US national survey showed that nearly 30% of participants aged 57–85 years take aspirin. However, these drugs also have effects on other systems—for example, the well-documented protective effect of aspirin in cardiovascular disease, and the anticancer effect of aspirin and other NSAIDs, which is thought to be mediated by cyclooxygenase 2 inhibition, reduced inflammation and effects on cell proliferation and apoptosis.

Contrary to this hypothesis though, is the suggestion that analgesic use may actually be associated with an increased risk of cancer. This association has previously been investigated using case-control studies, but a team from the USA has now carried out two large prospective studies to examine the use of analgesics with regard to risk of renal cell carcinoma (RCC). The results were published in *Archives of Internal Medicine*.

The team followed up patients enrolled in the Nurses Health Study (NHS) and the Health Professionals Follow-up Study (HPFS). Overall, more than 77,000 women and 49,000 men were included in the studies, which had follow-up durations of 16 years and 20 years, respectively. Every 2 years, patients received a lifestyle questionnaire that enquired about their use of analgesics and the diagnosis of any major illnesses, including RCC.

Over the duration of the study, 333 cases of RCC were catalogued—153 women and 180 men. Across the different classes of analgesics, aspirin was the most frequently used drug, with between 24% and 30% of study participants taking aspirin at least twice per week.

Neither aspirin nor acetominophen were associated with an increased risk of RCC. However, use of nonaspirin NSAIDs at least twice per week at baseline was associated with an increased risk of RCC, with a pooled multivariate RR of 1.51, compared with patients reporting only infrequent use of these drugs. Furthermore, this effect was dose-dependent, demonstrating a linear increase in RCC risk with more frequent use of nonaspirin NSAIDs.

The data regarding use of analgesic medication and RCC risk have, until now, been inconclusive, and these results are in contrast to conclusions drawn in previous studies. However, as the results were seen across two independent populations in the NHS and the HPFS, they are unlikely to be merely coincidental.

In patients requiring long-term treatment for pain disorders, the benefits of frequent use of analgesic drugs should always be weighed against the associated adverse effects. If the results of this study are supported by future work, the risk of RCC is certainly a factor that should be taken into consideration.

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Original article Cho, E. *et al.* Prospective evaluation of analgesic use and risk of renal call cancer. *Arch. Intern. Med.* **171**, 1487–1493 (2011)

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