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Non-steroidal anti-inflammatory drugs and the risk of oral cancer: a nested case-control study

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Summary

Background

Non-steroidal anti-inflammatory drugs (NSAIDs) seem to prevent several types of cancer, but could increase the risk of cardiovascular complications. We investigated whether use of NSAIDs was associated with a change in the incidence of oral cancer or overall or cardiovascular mortality.

Methods

We undertook a nested case-control study to analyse data from a population-based database (Cohort of Norway; CONOR), which consisted of prospectively obtained health data from all regions of Norway. People with oral cancer were identified from the 9241 individuals in CONOR who were at increased risk of oral cancer because of heavy smoking (≥5 pack-years), and matched controls were selected from the remaining heavy smokers (who did not have cancer).

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Findings

We identified and analysed 454 (5%) people with oral cancer (279 men, 175 women, mean [SD] age at diagnosis 63·3 [13·2] years) and 454 matched controls (n=908); 263 (29%) had used NSAIDs, 83 (9%) had used paracetamol (for a minimum of 6 months), and 562 (62%) had used neither drug. NSAID use (but not paracetamol use) was associated with a reduced risk of oral cancer (including in active smokers; hazard ratio 0·47, 95% CI 0·37–0·60, p<0·0001). Smoking cessation also lowered the risk of oral cancer (0·41, 0·32–0·52, p<0·0001). Additionally, long-term use of NSAIDs (but not paracetamol) was associated with an increased risk of cardiovascular-disease-related death (2·06, 1·34–3·18, p=0·001). NSAID use did not significantly reduce overall mortality (p=0·17).

Interpretation

Long-term use of NSAIDs is associated with a reduced incidence of oral cancer (including in active smokers), but also with an increased risk of death due to cardiovascular disease. These findings highlight the need for a careful risk-benefit analysis when the long-term use of NSAIDs is considered.

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