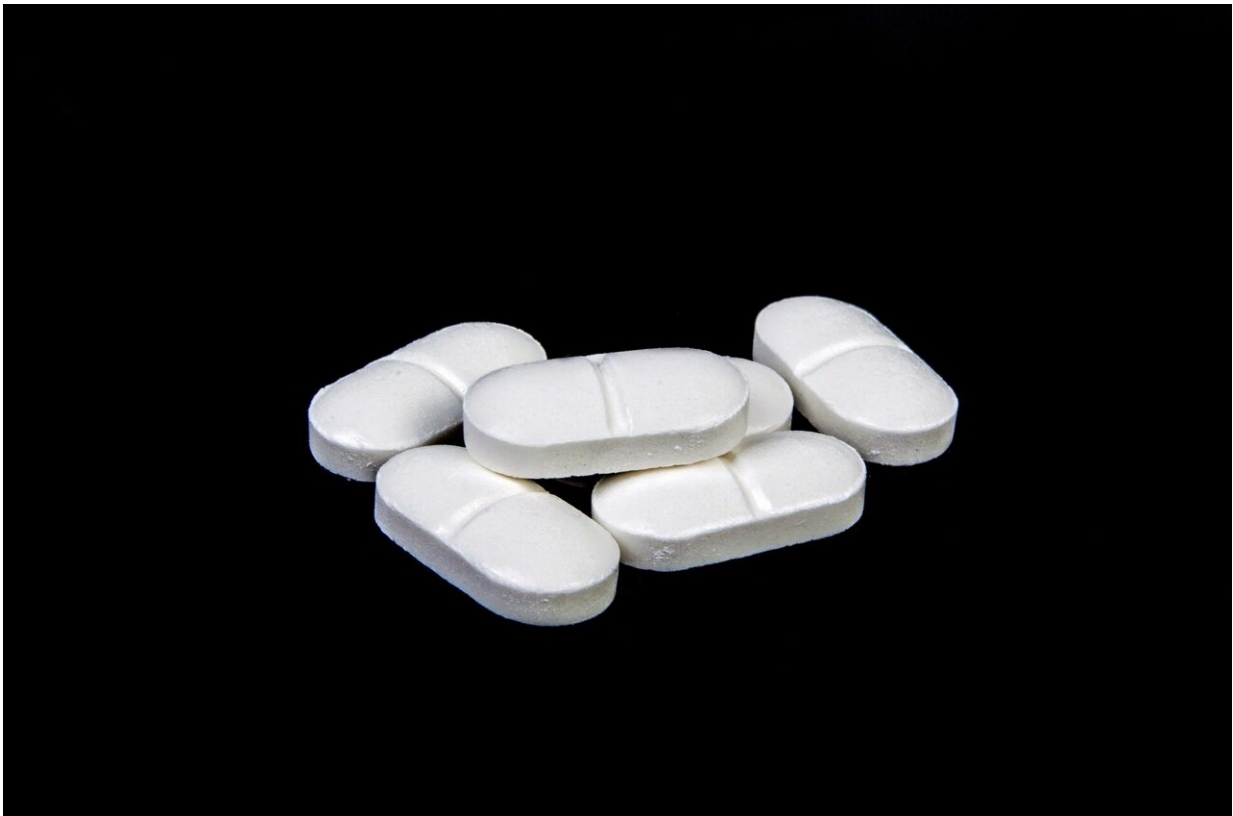


Three common medications lower risk and mortality for lung cancer

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Combined use of aspirin, statins, and metformin is associated with decreased lung cancer incidence and mortality, according to a study published in the *Journal of Thoracic Oncology (JTO)*.

All three medications are common—approximately 35 million people take a [statin](#) to control cholesterol; more than 120 million people take metformin to control diabetes; and between 6 and 10 million people take [aspirin](#) daily.

The aim of this study was to investigate the associations of aspirin, metformin, and statins with lung cancer risk and mortality using population-based nationwide cohort data from

The Korean National Health Insurance Services (KNHIS) database was used in the present study. The KNHIS is a universal health care system that covers the entire Korean population of 50 million.

"To our knowledge, no study has evaluated aspirin, statins, and metformin use and their combined impact on lung cancer incidence and mortality," said lead study author Dong Wook Shin, MD, DrPH, MBA at the Sungkyunkwan University School of Medicine in Seoul, Korean.

Dr. Shin and his colleagues (Dr. Jihun Kang and Dr. Su-Min Jeong) examined 732,199 Koreans from the Korean National Health Insurance Services database. The patients were followed between January 2004 and December 2013. Lung cancer incidence and mortality were identified using a registered lung cancer diagnosis code (ICD-10 code C34) and the Korean National Death Registry.

To address the combined associations of these cardiovascular drugs with lung cancer risk and mortality, the researchers categorized the cohort into eight groups, based on exposure to aspirin, statins, and metformin.

Combined use of aspirin, statins, and metformin was associated with decreased lung cancer incidence (aHR 0.83, 95% CI, 0.69-0.99) and mortality (aHR 0.83, 95% CI, 0.70-0.99) compared with non-users.

"When these cardiovascular drugs were used in combination, their protective associations with lung cancer risk and related mortality were augmented and the magnitude of effect increased with increasing duration of medication use," said Dr. Shin.

During 2012-2013 period (the most recent period in the study), study participants taking all three medications were 3.4% (23,163 out of 676,520).

"Interestingly, the inverse association of combined use of aspirin, statins, and metformin was prominent, and the longer the duration of combined use, the more protective the association. This finding is in line with a study demonstrating that aspirin and metformin synergistically inhibit lung cancer cell proliferation by activating AMP activated [protein kinase](#), which plays a critical role in regulation of lipogenesis in [cancer cells](#)," Dr. Shin wrote.

Dr. Shin theorized that concomitant use of aspirin, statins, and [metformin](#) concurrently inhibits multiple pathways related to lung cancer cell growth and proliferation resulting in favorable associations with [lung cancer](#) risk and [mortality](#).

Provided by International Association for the Study of Lung Cancer

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