Medical Xpress

Air pollution associated with cancer mortality beyond lung cancer

November 1 2017

Air pollution is classified as carcinogenic to humans given its association with lung cancer, but there is little evidence for its association with cancer at other body sites. In a new large-scale prospective study led by the Barcelona Institute of Global Health (ISGlobal), researchers observed an association between certain air pollutants and mortality from kidney, bladder and colorectal cancer.

The study, published in *Environmental Health Perspectives*, included more than 600,000 adults in the U.S. who participated in the Cancer Prevention Study II and who were followed for 22 years (from 1982 to 2004). The researchers examined associations of mortality from cancer at 29 sites with long-term residential exposure to three ambient pollutants: PM2,5, nitrogen dioxide (NO2) and ozone (O3).

Over 43,000 non-lung cancer deaths were registered among the participants. PM2,5 was associated with mortality from kidney and bladder cancer, with a 14 and 13 percent increase, respectively, for each 4.4 µg/m3 increase in exposure. In turn, exposure to NO2 was associated with colorectal cancer death, with a 6 percent increase per each 6.5 ppb increment. No significant associations were observed with cancer at other sites.

Michelle Turner, ISGlobal researcher and first author of the study, says, "Although a number of studies associate lung cancer with air pollution, there is still little evidence for associations at other cancer sites. This research suggests that air pollution was not associated with death from

most non-lung cancers, but the associations with kidney, bladder and colorectal cancer deserve further investigation."

More information: Michelle C. Turner et al, Ambient Air Pollution and Cancer Mortality in the Cancer Prevention Study II, *Environmental Health Perspectives* (2017). DOI: 10.1289/EHP1249

Provided by Barcelona Institute for Global Health