Pollution may cause increased risk of oral cancer, study finds

By DTI

TAIPEI, Taiwan: The debate on climate change and its effects on the earth are a hot topic. One discussion, in particular, is around air pollution, which is increasingly becoming a global issue. However, in South East Asia, many people have been dealing with smog for decades. In a new study, scientists in Taiwan have investigated the association between fine particulate matter (PM2.5) and oral cancer among Taiwanese men, and their results have increased knowledge in this regard, pointing to more research being needed to further understand the risk.

The number of new cases and deaths from mouth cancer are increasing in many parts of the world, and known risk factors include smoking, alcohol consumption, human papillomavirus, and, in parts of South East Asia, the chewing of betel quid (“paan”), a mix of ingredients wrapped in betel leaf. PM2.5 is known to be harmful to respiratory and cardiovascular health and to establish whether this might have a role in the increased number of mouth cancer patients, the researchers looked at a collection of data.

PM2.5 refers to atmospheric particulate matter that has a diameter of less than 2.5 μm, which is about 3 per cent of the diameter of a human hair. In the study, the scientists used 2012/2013 data from four linked health services and analysed a total of 482,659 cases of men of 40 years of age and above who had attended preventative health services and had provided information on their smoking and betel quid chewing habits.

According to the study’s results, 1,617 cases of mouth cancer were diagnosed among the men in 2012/2013. Unsurprisingly, smoking and frequent betel quid chewing were significantly associated with a heightened risk of this diagnosis. However, so too were high levels of PM2.5.

When compared with levels below 26.74 μg/m3, those above 40.37 μg/m3 were associated with a 43 per cent heightened risk of a mouth cancer diagnosis. Thus, the researchers, after considering potentially influential factors, found that increasing levels of PM2.5 may be associated with an increased risk of mouth cancer.

However, owing to the study’s observational methodology the authors pointed out that there are certain caveats to consider. These include the lack of data on how much PM2.5 enters the mouth and on long-term exposure to this pollutant. Nonetheless, they do believe that, owing to the large sample size, there is some room for further discussion regarding PM2.5 and its health effects.

The study, titled “Association between fine particulate matter and oral cancer among Taiwanese men”, was published online in the Journal of Investigative Medicine on 9 October 2018 ahead of inclusion in an issue.