Research links obesity to poor survival in tongue cancer patients

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(Medical Xpress)—Cancer experts from Memorial Sloan Kettering Cancer Center and Weill Cornell Medical College are working side by side to unravel the mysterious link between obesity and cancer. Most recently, their collaborative effort has yielded an interesting association: Obesity prior to diagnosis is associated with a five-fold increase in the risk of death from early-stage squamous cell carcinoma (SCC) of the tongue.

Their findings—the first-ever to link obesity and diminished survival in any head and neck cancer—were reported in the January 21 issue of the journal *Cancer*.

In previously published studies, obesity has been associated with a poorer prognosis for several common cancers, including those of the breast and colon, but the link has not been as easily understood in other cancers, including those of the head and neck. "The role of obesity across several common cancers is a focus of increased attention," said senior author Clifford Hudis, MD, Chief of Memorial Sloan Kettering's Breast Cancer Medicine Service and current President of the American Society of Clinical Oncology.

"Most prior research investigating the interaction between body mass index and head and neck cancers included multiple tumor sites and disease stages. Due in part to these confounding factors, it previously has been difficult to clearly understand the role of obesity in head and neck cancers," said Neil Iyengar, MD, a medical oncology and hematology

fellow at Memorial Sloan Kettering and the study's first author. "By focusing on a single site and a more select patient population, we designed our study to better identify new and relevant prognostic factors for this particular type of cancer, which could lead to further refined and tailored treatment strategies down the road."

The team's analysis included data from more than 150 patients diagnosed with SCC of the tongue. The experts looked at the relationship between a patient's body mass index and how long he or she survived after surgery. Their review revealed that obese patients were significantly less likely to survive over the next few years compared with non-obese patients. At the three-year mark, 68 percent of obese patients were alive, compared with 87 percent of normal-weight patients.

While it's not yet clear why obesity affects survival in patients with tongue cancer, previously published studies by the team showed that obesity caused low-grade, chronic inflammation within breast fat tissue. "The inflammation boosted levels of inflammatory mediators, which, among many other things, increase the production of estrogen," said Andrew Dannenberg, MD, the Henry R. Erle, MD - Roberts Family Professor of Medicine at Weill Cornell Medical College and the study's senior author. "When a fat cell dies, it leads to local inflammation in the area. Obese patients with larger fat cells are more likely to have this low-grade inflammation, which could promote the cancer's growth through several mechanisms."

Dr. Iyengar noted that once this link was discovered, it raised the possibility that the same biological process could be taking place in other sites. "Now that we've discovered an association between obesity and poor survival in this particular subset of patients, we're investigating whether inflammation has a role there as well," he said. "If such a connection is confirmed, it could lead to the possibility of testing anti-inflammatory treatments, including specific diets, as well as

interventions aimed at weight loss to improve outcomes in these patients."

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