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Medical School team ties pancreatic cancer to glucose level

By Elizabeth Crown

Diabetes and related health factors such as abnormal blood sugar levels, obesity and elevated serum uric acid concentrations have long been associated with higher cardiovascular disease risk.

A new study by Medical School researchers has also linked these health conditions to increased risk for pancreatic cancer.

Results of the study, which appeared in the Journal of the American Medical Association, showed that risk for pancreatic cancer rose incrementally with an individual's blood glucose level.

The association between pancreatic cancer and blood glucose levels also was independent of known pancreatic cancer risk factors, such as cigarette smoking and age, said Susan M. Gapstur, assistant professor of preventive medicine and lead author of the article.

"Because the prevalence of type-II diabetes and obesity, including childhood obesity, is steadily increasing, identifying a potential causal association between hyperglycemia and pancreatic cancer could have important preventive and prognostic implications for this cancer," Gapstur said.

In the United States, pancreatic cancer is the fifth most common cause of cancer death. Pancreatic cancer is difficult to diagnose, and tumors usually are detected after they have spread in the body. Thus, prognosis for pancreatic cancer is poor.

Gapstur and colleagues expanded on an earlier American Heart Association study of nearly 40,000 men and women who were screened for cardiovascular disease risk and followed up for an average of 25 years.

They analyzed the data to determine the association between blood glucose levels and risk for pancreatic cancer death among study participants who did not have diabetes when they entered the study, including 139 individuals who died of pancreatic cancer during the follow-up period.

The analysis used blood sugar levels measured one hour after participants had consumed a drink containing 50 grams of glucose and factored in other pancreatic cancer risk factors, such as age, race, smoking, obesity and blood uric acid level.

The researchers also assessed the association of pancreatic cancer death in those who had diabetes at the beginning of the study.

Results of the study showed a definite relationship between plasma glucose level and risk for dying of pancreatic cancer in both men and women who had elevated blood glucose levels. The study also indicated a positive association between cigarette smoking and risk for pancreatic cancer death. In addition, the researchers observed over a twofold greater risk for pancreatic cancer death among men who had diabetes when they entered the study.

"These results underscore the importance of research focusing on developing effective strategies aimed at modifying lifestyle factors, such as diet and physical activity, that are associated with hyperglycemia and diabetes," Gapstur said.

Gapstur's co-researchers on the study were Peter Gann, M.D., associate professor of preventive medicine; William Lowe, M.D., associate professor of endocrinology; Kiang Liu, professor of preventive medicine; Laura Colangelo; and Alan Dyer, professor of preventive medicine, at the Medical School.

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