MedicalXpress

Researchers identify potential target to delay metastatic pancreatic cancer and prolong survival

December 21 2011

Often, and without much warning, pancreatic cancer cells slip through the endothelial cells, head into the blood and out to other parts of the body to metastasize, making it one of the deadliest and hardest to treat cancers today.

Now, researchers from Thomas Jefferson University's Center for Translational Medicine have found that reducing levels of a well-known, cell-surface protein known as N-cadherin in those cancer cells can interfere with that activity. The disruption slowed down the pancreatic cancer cells' mobility, they found, and prolonged survival in mice.

The findings, published online in December in Nature's Oncogene, support a critical role for N-cadherin in pancreatic ductal adenocarcinma (PDA). Because this cancer does not typically produce symptoms until after it has metastasized, the mortality rate is very high—its five-year survival rate is less than 5 percent. Thus, strategies that specifically target and prevent the spreading of the cancer cells have the potential to significantly improve the prognosis for patients.

"Previous studies demonstrated the importance of this cell surface protein for tumor cell growth," said Glenn Radice, Ph.D., an Associate Professor in the Department of Medicine at Jefferson's Center for Translational Medicine, and co-author of the study. "However, it was not clear from those studies whether interfering with N-cadherin levels

would increase survival of animals genetically engineered to develop highly metastatic pancreatic cancer."

Using the mouse model, researchers found that reducing N-cadherin expression delayed tumor progression and prolonged survival in mice by 25 percent.

These studies implicate N-cadherin as a key regulator of multiple signaling pathways critical for cancer progression, a mechanism that can be exploited, the researchers point out.

This is another example of how researchers from the Center are bridging basic scientific discoveries with physicians' needs for their patients—by discovering and improving upon new targeted therapies for pancreatic cancer that may eventually be tested in clinical trials.

"Our survival results are very exciting because a drug, known as ADH-1, that specifically targets N-cadherin is already in clinical trial for melanoma" Dr. Radice said. "The next step is to test this N-cadherin-function blocking drug or a similar compound in the pancreatic cancer mouse model to see if it can prolong survival."

Provided by Thomas Jefferson University