Ovarian Cancer Markers of Response to Neoadjuvant Chemotherapy

High expression of the proteins HGF and c-MET have been found to be present in women with ovarian cancer who did not benefit from undergoing chemotherapy therapy prior to surgery.

The research, led by Marisa Mariani, PhD, of Danbury Hospital Biomedical Research Institute, was published in the open-access journal *OncoTarget.* "This approach is important because if you are eventually going to use a drug to target these markers, the drug will target the protein and not the gene," she said in a news release. "We had to confirm that what we were seeing at the gene level lead to a change at the protein level."

The researchers used tumor samples from patients with ovarian cancer who had undergone neoadjuvant chemotherapy, and discovered several prevalent microRNAs, the presence of which demonstrated an ability to survive even after exposure to chemotherapy. Among the discovered microRNA, miR-193a-5p was the most significant, they reported.

The team then conducted an analysis to determine the targets of miR-193a-5p and found that two genes, HGF and cMET, were significantly correlated with the microRNA. Finally, they used quantitative fluorescent immunohistochemistry to conduct a protein analysis and once again found that protein expression levels of HGF and cMET expression were significantly increased in patients after undergoing neoadjuvant chemotherapy. In fact, patients who relapsed shortly after neoadjuvant chemotherapy had the highest levels of HGF and cMET, and patients who responded best to the treatment had the lowest expression levels.

"Mir-193a-5p, HGF, and c-Met expression may help select eligible patients for this modality of treatment," the researchers concluded. "Moreover, inhibitors of this pathway may improve the efficacy of neoadjuvant chemotherapy."

Mariani's coauthors were Mark McHugh, Marco Petrillo, Steven Sieber, Shiquan He, Mirko Andreoli, Zheyang Wu, Paul Fiedler, Giovanni Scambia, Shohreh Shahabi, and Cristiano Ferlini.

Lymphoseek

Continued from page 20

primary tumor is an important diagnostic evaluation," Libero Marzella, MD, PhD, Director of the Division of Medical Imaging Products in the FDA's Center for Drug Evaluation and Research, said in a news release. "To use Lymphoseek, doctors inject the drug into the tumor area and later, using a handheld radiation detector, find the sentinel lymph nodes that have taken up Lymphoseek's radioactivity."

The safety and effectiveness for the new indication were established in a clinical trial of 85 patients with squamous cell carcinoma of the lip, oral cavity, and skin. All patients were injected with Lymphoseek. Surgeons then removed suspected lymph nodes—those identified by Lymphoseek and those identified by tumor location and surgical practice. Pathologic examination showed that Lymphoseek-guided sentinel node biopsy accurately determined if the cancer had spread through the lymphatic system.

The most common side effect reported in the trial was pain or irritation at the injection site.