Blood Test for Prostate, Other Cancer on Horizon

VITALS

Major Finding: Validation of the Carisome platform, in more than 900 clinically relevant plasma samples, showed that the test had an overall accuracy of 85% to detect prostate cancer.

Data Source: Lecture at Worldwide Innovative Networking in Personalized Cancer Medicine Symposium.

Disclosures: Dr. Knowles is vice chair and chief scientific officer of Caris Life Sciences Inc., the developer of the Carisome platform.

BY SARA FREEMAN

FROM THE WORLDWIDE INNOVATIVE NETWORKING IN PERSONALIZED CANCER MEDICINE SYMPOSIUM

PARIS — An assay that measures the number of exosomes in the blood may provide a novel means of diagnosing prostate and other cancers in the near future while avoiding the need for repeated biopsies.

Validation of the Carisome platform in more than 900 clinically relevant plasma samples showed that the test had an overall accuracy of 85% to detect prostate cancer. The test is in the late stages of validation, and Caris Life Sciences Inc. hopes to offer the test to U.S. urologists later this year.

"If you are diagnosed with high or accelerating [prostate specific antigen], this avoids or delays the next step of biopsy, which is painful or very unpleasant. This test should allow the detection of and differentiation between real cancer and benign prostatic hypertrophy" said Dr. Jonathan Knowles.

"All cells have three main ways in which they communicate," said Dr. Knowles, chief scientific officer of Caris. "They send out hormones, such as estrogen, or other small molecules, such as acetylcholine, or interleukin-6. They communicate via cell-to-cell contact. And they send out exosomes."

Exosomes are released from various cell types, and are found under both normal and pathological conditions, including cancer. "They are constructed in the endoplasmic reticulum, and they are specifically used by cells to communicate with other cells," said Dr. Knowles, who is also a professor of translational medicine at the École Polytechnique Fédérale de Lausanne (Switzerland) and holds a distinguished professorship in personalized health care at the Finnish Institute for Molecular Medicine in Helsinki.

'If you are diagnosed with high or accelerating PSA, this avoids or delays the next step of biopsy.'

DR. KNOWLES

He noted that exosomes are involved in the process whereby antigens are presented by dendritic cells to other cells in the immune system, and that they contain both micro and messenger RNA and are possibly used by cancer cells to "reprogram" other cells.

The Carisome platform is able to detect the almost 10-fold excess levels of exosomes in the plasma of patients with prostate cancer, compared with controls, and it has been shown to have 85% sensitivity and 86% specificity, based on 933 samples.

"From about 0.5 mL of blood, this particular assay can detect tumors of around 1 cm in size." Dr. Knowles said, adding that early indications suggest that variations of the test will be of value in the detection of other tumor types, such as colorectal, breast, lung, and ovarian cancers.

"Not only can you say that somebody's got cancer; you can also say what kind of cancer they have got," he said.

Although the price of the test is still to be determined, Caris hopes to introduce the Carisome platform in the United States as a CLIA (Clinical Laboratory Improvement Amendments) lab-developed test. In parallel, the company is preparing to submit the test for Food and Drug Administration and European Medicines Agency approval. The first test will be for prostate cancer, with assays for other tumor types to follow. ■