New blood test could offer more tailored treatment of ovarian cancer

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(Medical Xpress)—A new blood test allowing doctors to predict which ovarian cancer patients will respond to particular types of treatment is a step closer following a new study by Manchester scientists.

Researchers from The University of Manchester and The Christie NHS Foundation Trust - both part of Manchester Cancer Research Centre - say the test could be developed and used in hospitals within the next few years.

It would mean medics could see which patients could benefit from blood vessel-targeting drugs - such as bevacizumab - in addition to conventional therapy. Meanwhilehile others who are not going to benefit would be spared the time and side effects associated with having the drug. The test would also help to reduce the cost to the NHS.

Ovarian cancer has seen little increase in survival rates over the last few decades and scientists are seeking new treatment strategies to improve the standard approach of surgery and chemotherapy.

A recent advance has been to target the development of new blood vessels within the tumour - preventing the cancer from receiving the nutrients it needs to grow.

Bevacizumab, one of the blood vessel-targeting drugs, has shown significant but modest improvements in patient survival so doctors are seeking ways to predict which patients are most likely to gain an

advantage from this type of drug.

The research team looked at blood samples from patients enrolled in an international trial of bevacizumab. These patients received either standard chemotherapy treatment alone or chemotherapy plus the blood vessel-targeting drug.

Professor Gordon Jayson, Professor of Medical Oncology at The University of Manchester and Honorary Consultant at The Christie who jointly led the study, said: "We are keen to identify predictive biomarkers - measures that can indicate how well a patient will respond to treatment - so we can better target these drugs to patients most likely to benefit.

"We investigated levels of a range of proteins in patients' pre-treatment blood samples to see if any were associated with improved survival."

The findings, published recently in the journal *Clinical Cancer Research*, show that two particular proteins - Ang1 and Tie2 - could be used in combination to predict patient response. Patients with high levels of Ang1 and low levels of Tie2 were most likely to benefit from bevacizumab. Both these proteins are involved in controlling the formation of new blood vessels. Conversely, they found that patients with high levels of both proteins did not benefit from the additional drug.

Study co-author Professor Caroline Dive, from the Cancer Research UK Manchester Institute based at The University of Manchester, added: "We will now look to further explore the potential of using a blood test to personalise treatment for ovarian cancer patients. Moving towards a more individualised treatment plan specific for each patient and their particular tumour is key to improving outcomes for patients while sparing those unlikely to benefit from potential side effects of therapy."

More information: "The combination of circulating Ang1 and Tie2 levels predict progression free survival advantage in Bevacizumab-treated ovarian cancer patients." Alison Backen, Andrew Renehan, Andrew Clamp, Carlo Berzuini, Cong Zhou, Amit M. Oza, Selina Bannoo, Stefan J. Scherer, Rosamonde E. Banks, Caroline Dive, and Gordon C. Jayson. *Clin Cancer Res* clincanres.3248.2013; Published OnlineFirst June 19, 2014; DOI: 10.1158/1078-0432.CCR-13-3248