New drug tested for hereditary breast and ovarian cancers

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Oxford is to carry out a trial of a new cancer drug.

(Medical Xpress) -- A trial of a new drug for patients with hereditary breast or ovarian cancer at an advanced stage has been launched at the University of Oxford.

The study, funded by Cancer Research UK and the Oxford Biomedical Research Centre, is looking at a drug called 6-mercaptopurine, or 6MP. The drug is already used to treat leukaemia and is often given alongside another chemotherapy drug called methotrexate.

Around 15 out of every 100 women with breast and ovarian cancers have cancers likely to be caused by inherited faults in BRCA1 or BRCA2 genes. Genetic testing for faulty BRCA genes is available on the NHS for women with a very strong family history.

Treatments for these cancers can include platinum-based chemotherapy drugs such as cisplatin or a newer class of drugs called PARP inhibitors. But, even with these new drugs, resistance can develop meaning some women stop responding to treatment.

Previous laboratory studies suggest that a class of drugs called thiopurines, which includes 6MP, are effective at killing cancer cells lacking BRCA – even after they have developed resistance to treatments like PARP inhibitors and cisplatin.

"PARP inhibitors are a powerful new class of drugs developed specifically to target tumors caused by BRCA 1 and BRCA2 faults, but drug resistance remains a problem," explains Shibani Nicum, a gynaecology specialist based at the Oxford Experimental Cancer Medicine Centre (ECMC), and a researcher in Oxford University's Department of Oncology. "We hope that the very encouraging results we have seen in early laboratory studies involving 6MP will lead to increased treatment options for these patients in the future."

The trial is one of a growing number looking at matching patients to the most appropriate treatment based on their genetic makeup and that of their cancer – an approach known as personalised medicine.

Trial participant Suzanne Cole, 54, from Newbury, has a strong history of ovarian cancer in her family, with her sister, mother and grandmother all having been diagnosed with suspected cases of the disease at a relatively young age. But it wasn't until many years later, after she herself was diagnosed with cancer, that doctors were able to trace the cause of this back to a BRCA1 mutation in her family.

She said: "I was diagnosed in 2009 and initially had surgery then chemotherapy. I was then told about the trial and I went away and studied the information. The doctors were able to answer all my

questions and then I agreed to sign up. I'm happy to be a part of this work as it could help others by moving treatments forward."

The Oxford study aims to recruit 65 patients at 10 centres around the UK, all with advanced breast or ovarian cancer and having either BRCA1 or BRCA2 gene mutations.

If successful, the results would pave the way for a larger clinical trial, which would determine whether the drug could become an important extra treatment option for this patient group.

Professor Mark Middleton, director of the Cancer Research UK-funded Oxford ECMC at Oxford University, said: "It's exciting to see drugs being developed for specific groups of patients who share the same underlying genetic faults in their cancer. Targeted treatments are at the cutting edge of cancer care and we're proud to be involved in bringing such drugs a step closer to the clinic."

Dr. Sally Burtles, Cancer Research UK's director of the ECMC Network, said: "This study helps demonstrate the value of being able to pool subsets of patients who share specific rare faults in their tumour from a UK-wide network of Experimental Cancer Medicine Centres. This will be crucial as we move towards a new era of personalized medicine with treatments targeted according to the individual biological profile of a patient's cancer."

Provided by Oxford University