

Loss of protein could contribute to early breast and ovarian cancer deaths

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(PhysOrg.com) -- The loss of a cell repair protein in a large proportion of women battling breast or ovarian cancer could explain why they die early, new research suggests.

Scientists at the University of Leeds, funded by Yorkshire Cancer Research and [Breast Cancer Campaign](#), have discovered that the loss of the human protein MCPH1 in cancer cells correlates with the large number of women who undergo surgery and chemotherapy to kill residual cancer cells but yet still die early because they are resistant to it.

The protein MCPH1 helps cells repair DNA damage and influences the function of the genes [BRCA1](#) and BRCA2, certain variations of which are associated with a sharp increased risk of developing breast and or ovarian cancer.

The Leeds scientists have found that in 319 breast cancer sufferers and 47 ovarian cancer sufferers who have undergone surgery and chemotherapy, 29 percent of those breast cancer patients and 19 percent of those ovarian patients are deficient in MCPH1, particularly those with fast developing ovarian cancer and those resistant to chemotherapy.

University of Leeds Senior Research Fellow at Leeds Institute of [Molecular Medicine](#) (LIMM) Dr Sandra Bell said: "This is an exciting discovery. We have found that the reduced levels of MCPH1 in these breast and [ovarian cancer](#) patients are associated with increasing tumour grade and poor survival.

"We have also demonstrated that MCPH1 regulates resistance to the chemotherapeutic drugs Paclitaxel and Parp inhibitors in a mechanism yet to be defined so the fact it is not present in these patients' cancer cells open up a new therapeutic window.

Yorkshire Cancer Research is now funding the use of a new technology to rapidly identify molecules which selectively kill cancer cells which have lost the MCPH1 protein but do not kill cells which contain it.

"The identification of these molecules should allow new chemotherapy drugs to be developed that are tailored for women with breast and ovarian cancers who are dying earlier than expected because they are resistant to current chemotherapies."

Provided by Yorkshire Cancer Research

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