

Scientists find why tamoxifen fails some breast cancers



Tamoxifen is given to most women with breast cancer

UK scientists say they have discovered why some women fail respond to breast cancer treatment, and it is a gene error they believe they can fix.

Tamoxifen is given to most women diagnosed with breast cancer to prevent the cancer returning.

But not all women respond to the drug - experts estimate a third get no benefit.

The work in the journal *Cancer Research* suggests the problem is too much of a gene called FGFR1.

This discovery could lead to new treatments for these women as scientists "switch off" the action of FGFR1, enabling Tamoxifen to work.

The team of scientists in the Breakthrough Breast Cancer Research Centre at The Institute of Cancer Research have already shown this is possible in the lab.

They introduced a drug which "switched off" the action of FGFR1.

Once FGFR1 was stopped, hormone-based treatments like Tamoxifen could get back to work in destroying cancer cells, they found.

The researchers believe this could ultimately help thousands of women each year.

They say one in 10 breast cancer patients has too much of the FGFR1 gene.

Dr Nick Turner, who led the research, said: "Understanding how this gene can cause Tamoxifen resistance reveals a new drug target for treating breast cancers in patients who would otherwise have a poor outcome.

"There are a number of drugs in development that stop FGFR1 working, and clinical studies

are investigating whether these drugs work against cancers with too many copies of this gene.

"The next step is to set up a clinical trial to see whether a drug that blocks the action of this gene can counteract hormone therapy resistance in breast cancer patients.

"If these trials confirm our lab work we could be on the verge of a potentially exciting new treatment for breast cancer."

Dr Lesley Walker of Cancer Research UK, the charity which helped fund the work, said:

"Cracking the problem of resistance to treatments such as Tamoxifen would be a major advance in treating breast cancer."

Breast cancer is the most common cancer in the UK affecting more than 45,500 women each year.

Tamoxifen blocks the female sex hormone oestrogen that fuels the growth of some breast tumours.