

Testicular cancer genetic advance

Researchers have for the first time found inherited genetic factors which raise the risk of testicular cancer.

A UK team found many testicular cancer patients shared common DNA variants on chromosomes five, six and 12 that healthy men did not have.

This finding was echoed in a separate US study in the same journal, Nature Genetics, which highlighted two of the same variations.

Both studies raise hopes of better treatments and diagnostic tests.

The UK team, from the Institute of Cancer Research, compared the profile of 730 testicular cancer patients with those of healthy men.

TESTICULAR CANCER

- Mainly affects young men aged 20-44
- Around 1,900 new cases a year in the UK
- Treatment cures over 95% of patients
- Untreated, cancer cells may spread to nearby lymph nodes. The disease can also spread to the lungs or, rarely, other organs

They found men who inherit any of the three genetic variants have a raised risk of the disease.

Those who carry the variant most closely linked to the disease have two to three times the risk of the general population.

And inheriting all three variants raises the risk by up to fourfold.

However, it is still the case that only a small proportion of men who carry the higher risk variations will actually develop testicular cancer.

Researcher Dr Elizabeth Rapley said: "We have known for some time that men whose father, brothers or sons had testicular cancer are much more likely to get it themselves and we have been searching for this genetic link.

'More to be found'

"We have identified three genetic factors linked to an increased risk of testicular cancer. We believe there are more still to be found and we are working on identifying the rest."

Professor Mike Stratton, from the Wellcome Trust Sanger Institute, also worked on the study.

He said: "By combining these genetic risks with other known risk factors it may be possible in future to identify men who are at high risk of developing testicular cancer, particularly those who have a brother or father already affected by the disease.

"This may allow early detection or prevention.

All three genetic variants uncovered by the study were found near genes involved in the survival and development of cells which go on to form sperm.

The finding suggests that disrupting the work of these genes may be one mechanism by which cancer is able to grow.

More tests due

One of the variants was found in a gene called KITLG, which is also known to play a role in skin pigmentation.

The higher risk variant was found much more commonly in white men, and may explain why they seem to have a higher risk of testicular cancer.

Ed Yong, of the charity Cancer Research UK, said: "While more than 95% of testicular cancer patients are successfully treated, finding genes that increase the risk of this cancer is important.

"It tells us more about its basic biology and presents new opportunities to prevent, diagnose and treat the disease in those men most at risk - men aged under 50."

Previously, a small US study found a specific gene was more active in some types of testicular cancer cells, but did not establish whether it was inherited, or triggered only in cancer cells after the disease started to develop.

In the latest study, the researchers established the key genetic variations were found in every cell of the patients' bodies - clear evidence that they were definitely inherited.

The researchers are now looking for up to 3,000 men who have had testicular cancer to participate in the study to identify more genetic risk factors.

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