

Detection test raises hope for women

EXCLUSIVE

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Hope is rising for ovarian cancer survival rates in Australia, as a new test enables early detection for the first time – but surgeons are questioning whether the blood-test technology may lead to unnecessary interventions.

A world-first early detection blood test, which has application in ovarian and pancreatic cancer, was launched in Sydney this week, with developing ovarian cancer now able to be detected in women through the presence of abnormal DNA in their bloodstream.

Dubbed the Avantect test, it works by detecting in the bloodstream abnormal fragments of DNA known as cell-free DNA (cfDNA) which are thrown off by cancer tumours, and can be detected years before cancer displays symptoms.

Cancer-driving proteins in the bloodstream are triggered by DNA changes and changed altered methylation patterns, and the presence of certain messenger RNA in the blood also throws up a red flag.

The prognosis for ovarian cancer is poor. Five-year survival rates hover at about 49 per cent overall, dropping to less than 30 per cent when ovarian cancer is detected at stage 4, which is common. However, early detection increases the odds substantially, up to a 90 per cent chance of five-year survival.

In the only current option for prevention, high-risk women are forced to undergo drastic measures such as having their ovaries removed, sometimes during their fertile years, prompting surgical menopause with all of its consequences of synthetic hormone replacement and ongoing symptom management.

The Avantect test, developed by the US-based precision diagnostics company ClearNote and commercialised by the Australian-listed company BCAL Diagnostics, has been made possible thanks to the rapid development of genomics in the past decade.

Genetic screening has contributed to vast worldwide DNA databases that have been computationally analysed, including using artificial intelligence, to re-



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veal tumour mutations common to particular cancers as well as changed methylation patterns.

The test is based on the same technology commonly used in embryo screening for non-invasive pregnancy testing, otherwise known as the Harmony Test.

But clinicians are warning that in the case of ovarian cancer, a positive result that detects the early development of the devastating cancer may be impossible to act upon.

Gynaecological oncologist Greg Gard described the Avantect test as “really exciting”, but warned early detection may become problematic. Diagnostic screening is very difficult in early stage ovarian cancer, whereas there are more options in pancreas cancer screening, including endoscopic ultrasound.

“Changes you’re looking for are never going to be seen on ultrasound in early ovarian cancer because they’re too small,” says Gard, a clinical associate professor in the school of medicine at the University of Sydney.

“What are you going to do in the meantime for these women? And so it’s actually surgery that is going to be diagnostic and preventive. Whereas this test is not preventive, it’s just picking something up very early, which would be fantastic in certain populations but that population is not going to be huge.

“To introduce this as a screening test for the general population I think would lead to quite a bit of unnecessary intervention because even though this test’s specificity is quite high, the prevalence of ovarian cancer is not high in the population, so the false negative rate would be small but still significant. That said, I do think this is the next stage in early detection. It’s really exciting.”

The Avantect test is available only privately and costs \$1495 at the Sydney Breast Clinic. It will be rolled out to other locations nationally in the coming months.