

**Developing choices for women at high risk of ovarian cancer:
a briefing paper from The Eve Appeal**

Research is moving closer to developing choices for women who are at high risk of developing ovarian cancer. The latest results from the UK Familial Ovarian Cancer Screening Study (UK FOCSS) published in February 2017 indicate that an evidence-based screening test may be on the horizon.

This briefing paper explores:

- Who is at high risk of ovarian cancer?
- What are their current choices?
- Why is a screening test needed?
- What are the latest research results from UK FOCSS?
- Where next?

Ovarian cancer: who is at risk?

Over 7,000 women a year are diagnosed with ovarian cancer in the UK and over 4,000 a year die from the disease. Its symptoms are vague and often not picked up until the cancer is advanced when it is difficult to treat effectively.

Most women won't develop ovarian cancer and have a low risk – it affects around one in 52 women in the UK. But some women are at much higher risk. They are women with a family history of ovarian cancer and include those with a BRCA gene mutation – like actor Angelina Jolie. The lifetime risk of developing ovarian cancer for a BRCA1 mutation carrier can be as high as 60%, with the risk rising from the age of 35.

Choices for high-risk women

Women with a known high risk of developing ovarian cancer face a stark choice: have surgery to remove their ovaries and fallopian tubes and reduce their risk – or watch and wait for symptoms. Neither is ideal.

Surgery is a highly effective method for reducing risk but cannot eliminate it entirely. Some studies show that the lifetime risk of developing 'primary peritoneal' cancer (cancer of the lining of the pelvis) after preventive surgery is 5%. But the operation renders a woman infertile and she will need to take hormone replacement therapy to ameliorate the side effects of an early menopause.

Watching and waiting for symptoms runs the risk of not detecting a cancer until it has spread – at which point it is difficult to treat.

Many women at high risk of ovarian cancer would prefer not to have surgery – or at least delay it until they are past child-bearing age - but worry that watching and waiting is not a realistic option either. Therefore, is there a screening solution?

Screening: what are the benefits and limitations?

Screening does not prevent cancer. Effective screening detects cancer early when it is more easily treated. When diagnosed at its earliest stage, 9 in 10 women with ovarian cancer will survive their disease for five years or more, compared with fewer than 1 in 10 of women diagnosed at the latest stage.

The Eve Appeal co-funded UK FOCSS, a UK-wide study to develop a screening tool for ovarian cancer. Running since 2002, it has studied thousands of women. The latest results show we may now be able to pick up nine in ten ovarian cancers in these high-risk women before they cause symptoms, over one third of them at an early stage.

UK FOCSS research: the latest

In February 2017, the Journal of Clinical Oncology published a landmark paper detailing how over 4,000 women with a one in 10 or greater risk of developing ovarian cancer took part in UK FOCSS after declining surgery to remove their fallopian tubes and ovaries.

They were screened with a blood test for the tumour marker CA125 every four months and an ultrasound scan of their pelvis once a year. The blood test results were analysed by a computer algorithm, calculating the chances the woman had an ovarian cancer. Women calculated to be at risk were referred to a gynaecologist to decide if they should have their ovaries and tubes removed. Researchers followed the women who took part for five years.

During the screening phase of the study and in the year after their last test, 19 women were diagnosed with ovarian cancer although none had any ovarian cancer symptoms.

During follow-up, a further 18 women were diagnosed with ovarian cancer more than one year after the end of screening. Seventeen (94%) of these 18 women had the most advanced stages of cancer (IIIB-IV) compared to seven (37%) of the 19 diagnosed during the screening phase.

Screening was estimated to have detected over 9 out of 10 cancers before they caused symptoms. Women on the screening program were significantly less likely to be diagnosed with the most advanced stages of ovarian cancer compared with those who were no longer being screened on the program. In addition, over 90% of women diagnosed during the screening phase had all their tumours removed at the time of surgery. This is known to be very important in terms of predicting long-term survival. Finally, these women did not require complex surgery to remove all their tumours. However, the study was not able to show whether the screening increased the time women survived their cancer.

The conclusions are significant. For women not yet willing to undergo risk-reducing surgery, the screening programme developed by UK FOCSS appears to offer the best chance of avoiding being diagnosed with a very advanced cancer. Therefore, screening along with continued discussions about the need for risk-reducing surgery is an option for such women.

What next?

This is an important step in developing a screening tool for women at high risk of developing ovarian cancer and who have decided against undergoing preventive surgery.

Sources:

- Evidence of a stage-shift in women diagnosed with ovarian cancer during Phase 2 of the UK Familial Ovarian Cancer Screening Study (UKFOCSS)
- Cancer Statistics: sourced from Cancer Research UK <http://www.cancerresearchuk.org/health-professional/cancer-statistics/statistics-by-cancer-type/ovarian-cancer#heading-Two>
- Additional statistics from A Beginner's Guide to BRCA1 and BRCA2. The Royal Marsden NHS Foundation Trust. April 2013. https://www.royalmarsden.nhs.uk/sites/default/files/files_trust/brca_0.pdf