



LADY GARDEN FOUNDATION

IMPACT REPORT



£800K DONATED

- 4 Research Fellows supported
- Consent for the collection of more than 700 samples of gynaecological cancers
- 9 Research publications
- 1 mutation identified in some patients with recurrent gynaecological cancers

Investing in the future of women

Since The Lady Garden Foundation launched in 2014, 80,000 women in the UK have been diagnosed with a gynaecological cancer. Only 56% have a good chance of survival, the outlook is much worse for the other 35,000 women. It is only through research that we will be able to save more lives.

We have helped raise £800,000 to fund gynaecological research at The Royal Marsden, supporting Dr Susana Banerjee's personalised therapies research programme.

The Lady Garden Foundation's support has paved the way to potentially life-changing treatment options for women with gynaecological cancers.

Highlights include

1. Supporting the discovery that a personalised treatment successful in other cancers could work for gynaecological patients
2. Investing in the gynaecological cancer experts of the future by supporting four research fellows
3. Making gene testing quicker at The Royal Marsden with the view of replicating it around the UK
4. Investigating if immunotherapy might be an option for women with gynaecological cancers
5. Obtaining consent from over 700 patients to use their blood and tumour samples, creating a precious resource for future research
6. Sharing research findings with the global cancer research community

GETTING PERSONAL

WITH CANCER TREATMENTS

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Thanks to the Lady Garden Fellows, the Royal Marsden Gynaecological Research Unit has one of the largest numbers of clinical trials open for gynaecological cancers in the world. Without fellows we couldn't have so many trials that offer patients more treatment options, some of which are not available anywhere else in the UK

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Dr Susana Banerjee,
Consultant Medical Oncologist and Clinical Research
Lead at The Royal Marsden

The underlying question to all of Dr Banerjee's research is "which patients will benefit from which therapies?" The genetic and molecular profile of a cancer can be found by analysing tissue samples and from

this information it is possible to identify molecular abnormalities, so that clinicians can select the best available drugs for that patient, rather than the traditional 'one size fits all' approach.

1. Supporting the discovery that a personalised treatment successful in other cancers could work for gynaecological patients

No targeted treatments currently exist for gynaecological cancer. Chemo reduces tumour size in only 1 in 10

Lab research from The Royal Marsden's academic partner, the Institute of Cancer Research, shows that cancer cells with a specific mutation in a gene called ARID1A are more likely to respond to a new class of anti-cancer therapy called ATR inhibitors, or ATR inhibitors with PARP inhibitors

Dr Banerjee leads clinical research: Can rare gynaecological cancer tumours shrink with this targeted anti-cancer treatment and which women are most likely to benefit?

Peer-reviewed publication in The Journal of Pathology: Clinical Research

Findings: Around 1 in 3 women with rare types of gynaecological cancers have an abnormality in ARID1A gene. The team report a method of identifying patients with this abnormality. ATR inhibitors therefore could be a treatment option for these gynaecological patients

Lady Garden Foundation funding enables gene testing of 50 tumour samples from women with ovarian, endometrial and cervical cancers

Dr Banerjee presents results and trial proposal to national and international leader groups

Further validation tests ongoing and finalisation of collaboration with pharmaceutical sponsor to develop the trial, anticipated to open in 2019

The ATARI international trial will be the first in the world testing if this targeted approach works in gynaecological cancers with an ARID1A abnormality. LGF funds will support the molecular testing

2. Investing in the gynaecological cancer experts of the future

The Lady Garden Foundation Fellows that we are supporting are achieving international recognition for their work. Dr Cecilia Orbegoso in November presented at the European Society of Medical Oncology (ESMO) Asian conference in Singapore. It is a very high accolade to be invited to speak at a conference of this scale. Dr Orbegoso presented on gene abnormalities in endometrial cancer and won a Merit Award. We are also delighted to tell you that Dr Lucy Dumas won the Young Investigator Award at the International Society of Geriatric Oncology conference this year in Amsterdam. Dr Dumas was selected to present at the conference and won the award for part of her Masters which focuses on improving outcomes for older women with ovarian cancer. By supporting Research Fellows we are investing in the development of cancer experts who will go on to treat patients and progress research around the world for decades to come.

3. Making gene testing quicker at The Royal Marsden with the view of replicating it around the UK

Our funding has supported the refinement of a BRCA gene test that identifies which patients will benefit from targeted therapies such as olaparib. Licensed in 2016, olaparib was the first new drug available through the NHS for ovarian cancer in over 10 years and the first ever targeted therapy for this disease. Our funding enabled a pilot evaluation of testing tumour samples for the BRCA gene that proved reproducible and accurate results are achievable in hospital laboratories. Testing on site helps clinicians make quicker treatment decisions, giving patients more rapid access to personalised drugs. Thanks to this study, The Royal Marsden genetics team are now working with pharmaceutical companies to explore replicating the test so it can become routine practise across the UK.

4. Investigating if immunotherapy might be an option for women with gynaecological cancers

Lady Garden Foundation Fellow, Dr Orbegoso, is testing samples for 'microsatellite instability. If a cell is high in microsatellites (short, repeated sequences of DNA) it has difficulties replicating. Knowing if a patient has cells like this can help direct decisions about their treatment. For example, it is known that these patients are more likely to respond to immunotherapy. The test could also identify women who have a genetic predisposition to gynaecological and colon cancers.

5. Obtaining consent from over 700 patients to use their blood and tumour samples, a precious resource for future research

Patient samples are vital for cancer diagnosis and treatment and are a precious commodity in cancer research. Without them, it would simply not be possible to carry out meaningful research into the causes and consequences of cancer, or to develop and test new therapies. Lady Garden Foundation Fellows are part of a team that has gained consent from over 700 patients for their blood and tumour samples to be used for research. From these, more than 200 cancer biopsies and blood samples have already been collected across a number of gynaecological cancers. Collecting, processing and preserving samples is both a technical and time consuming process. A Bio-specimen Coordinator is only able to manage samples from up to four patients each day. The samples will be carefully stored for current research but will also be available long into the future for researchers doing tests that possibly don't even exist yet

6. Sharing research findings with the global cancer research community

By sharing knowledge with the cancer research community around the world, research teams everywhere are able to develop ideas and build on each other's successes to change practice and get closer to a cure. Research is only invited to be presented or published if it is robust and impactful. Dr Banerjee is recognised globally as a leader in gynaecological research. Alongside other positions she serves on the European Society for Medical Oncology (ESMO) Executive Board and has been elected as a Fellow of The Royal College of Physicians. Dr Banerjee was the Co-Chair of the ESMO Asia congress 2018 and Chair for Gynaecological Cancers at the international ESMO congress in Munich 2018 where there were over 27,000 attendees. Recently, Dr Banerjee has been invited to serve on the US Society of Gynaecologic Oncology committee for the 2020 congress and the European Society of Gynaecological Oncology 2019 congress. Dr Banerjee has been proud to acknowledge The Lady Garden Foundation's support at a number of international conferences and in the following publications:

◆ The impact of systemic therapy beyond first-line treatment for advanced cervical cancer.

McLachlan J, Boussios S, Okines A, Glaessgen D, Bodlar S, Kalaitzaki R, Taylor A, Lalondrelle S, Gore M, Kaye S, Banerjee S. *Clin Oncol (R Coll Radiol)*. 2017 March (3): 153-160

◆ Targeting the mitogen-activated protein kinase pathway in low-grade serous carcinoma of the ovary.

McLachlan J, Gore M, Banerjee S. *Pharmacogenomics*. 2016 Aug;17(12):1353-63

◆ The current status of PARP inhibitors in ovarian cancer.

McLachlan J, George A, Banerjee S. *Tumori*, 2016 Oct 13;102(5):433-440

◆ BRCA somatic mutations and epigenetic BRCA modifications in serous ovarian cancer.

Moschetta M, George A, Kaye SB, Banerjee S. *BRCA somatic mutations and epigenetic BRCA modifications in serous ovarian cancer. Ann Oncol*. Aug 2016

◆ Olaparib for the treatment of epithelial ovarian cancer.

McLachlan J, Banerjee S. *Expert Opin Pharmacother*. 2016 May;17(7):995-1003. • Targeted agents and combinations in ovarian cancer: where are we now? McLachlan J, Lima JP, Dumas L, Banerjee S. *Expert Rev Anticancer Ther*. 2016 Apr;16(4):441-54.

◆ Improving outcomes for older women with gynaecological malignancies.

Dumas L, Ring A, Butler J, Kalsi T, Harari D, Banerjee S. *Cancer Treatment Reviews* Nov 2016

◆ The role of hormonal therapy in patients with relapsed high-grade ovarian tamoxifen and letrozole.

George A, McLachlan J, Tunariu N, Della Pepa C, Migali 2017;17(1):456. doi: 10.1186/s12885-017-3440-0.

◆ Optimised ARID1A immunohistochemistry is an accurate predictor of ARID1A mutational status in gynaecological cancers.

Saira Khaliq, Kalnisha Naidoo, Ayoma D Attygalle, Divya Kriplani, Frances Daley, Anne Lowe, James Campbell, Thomas Jones, Michael Hubank, Kerry Fenwick, Nicholas Matthews, Alistair G Rust, Christopher J Lord, Susana Banerjee, Rachael Natrajan. *The Journal of Pathology*, 2018 July;

◆ Targeted agents and combinations in ovarian cancer: where are we now?

McLachlan J, Lima JP, Dumas L, Banerjee S. *Expert Rev Anticancer Ther*. 2016 Apr;16(4):441-54.

THE IMPACT CONTINUES

Thank you so much for your generous support, which totals an incredible £800,000 to date. Some of the funding has supported the important research outlined

already and part of the money has been committed to critical elements of projects that will be spent over the next 12 to 24 months.

1.

The OCTOPUS trial, led by Dr Banerjee, is a clinical trial that adds a new drug to routine chemotherapy for ovarian cancer patients. Phase I was hugely successful and gained national news coverage; the drug combination caused the tumours of over half of patients with ovarian cancer to shrink, and stopped patients' cancers from growing for nearly six months. In Phase II, 140 patients have been treated and results are pending to see if the combination has better outcomes than the standard chemotherapy alone. Once the final data has been submitted by all the participating centres, the team will analyse why some patients responded when others did not, in order to identify any biological reasons behind the differences in outcomes. Funding from The Lady Garden Foundation has been reserved for this research and will help develop knowledge around resistance and personalise this treatment for patients

2.

Part of The Lady Garden Foundation's funding has been protected to continue our involvement with the ATARI study once the main trial is completed. The trial will include 20-30 hospitals across the UK, France and Canada and involve up to 116 patients. It could revolutionise treatment options for women with rare, relapsed or advanced cancer. Currently only 1 in 10 will see tumour shrinkage with chemotherapy but early results suggest that 1 in 6 women may have a greater chance of responding to ATR inhibitors. Lady Garden Foundation funding will support work to understand why some patients respond to the drug and some do not, therefore finding out what clinicians need to test for to see if this is the best treatment option for a patient. Without Lady Garden Foundation funding the trial would not be possible.

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The support of the Lady Garden Foundation is critical to the development of research that could change the way women with gynaecological cancers are treated in the future

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Dr Susana Banerjee,
Consultant Medical Oncologist and Clinical Research
Lead at The Royal Marsden

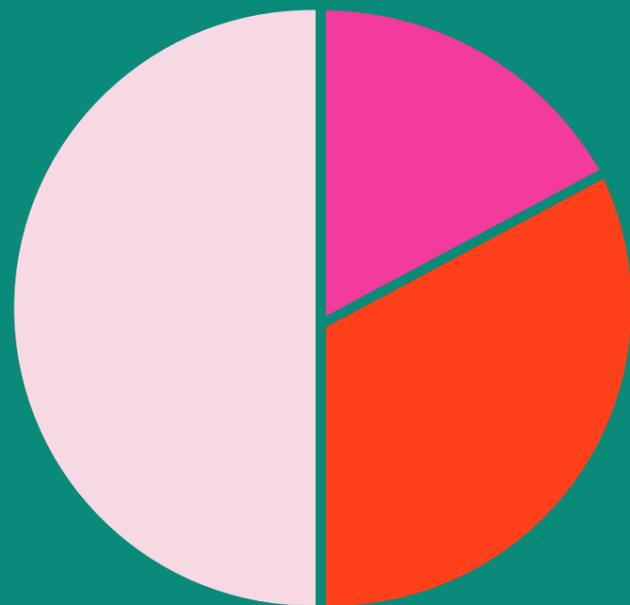
THANK YOU

The Lady Garden Foundation continues to be a very proud supporter of The Royal Marsden Cancer Charity. The research we are funding has increased understanding about gynaecological cancers – the team know much more now than they did four years ago. It is now known that some patients have the molecular profile to benefit from recently licensed drugs and even newer drugs that are yet to be licensed. It has been proven that certain tests can reliably and accurately be carried out in hospital laboratories to identify which patients will benefit; this makes access to drugs quicker for some patients. There are significantly more blood samples and biopsies to test;

this enables the team to react much more quickly to new scientific breakthroughs and establish if gynaecological patients might benefit from the discoveries sooner.

Thank you to every committee member and to our supporters, sponsors and volunteers who are contributing to a better future for women with gynaecological cancers. We are thrilled to be supporting The Royal Marsden's gynaecological research and we look forward to sharing how our support benefits even more patients.

What our donations are funding



- ◆ Fellowships:
including completed and ongoing projects -£370k
- ◆ ATARI trial:
current and future - £260k
- ◆ OCTOPUS trial:
future - £120k



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