

GO FUND Newsletter

"I support the GO Fund and their research, and encourage you to assist this worthwhile cause."

Nicole Kidman



• Research • Treatment • Awareness • Prevention of Gynaecological Cancer

Supporting a collaboration between the Royal Hospital for Women and the Garvan Institute for Medical Research

JANUARY 2005

GO Fund PO Box 1045
Randwick NSW 2031
Tel: 02 9382 6283
Fax: 02 9382 6200
www.gofund.org.au
ABN 670 629 86109

New fertility sparing surgery performed

Carolyn Beath is still recovering from the shock of discovering that she had cervical cancer.

A year ago, Carolyn visited her GP because of some slight bleeding. Her Pap smear was normal and when she visited her gynaecologist, he too found nothing abnormal.

A second Pap smear in February was abnormal and her gynaecologist noted a small ulcer on her cervix. A cone biopsy was performed at the end of March.

At this stage, Carolyn was starting to worry. "I had only just started back into work when I had to go into hospital. My boss was sympathetic and said my health was important and to have it looked at."

Although her family and boyfriend,

Andy, were there for support, Carolyn was agitated. After the operation she was given the news "It's cancer of the cervix."

"I thought 'we can do something about this', but the recommendation from my gynaecologist was that I have a radical hysterectomy. Suddenly I was faced with the prospect of never being able to have children. I was devastated! You never think it's going to be taken away from you and so I was crying and in a daze. But my boyfriend said 'it's OK, we'll deal with this'. We were both in shock."

Carolyn says she was blaming herself because she was a smoker. Then she made up her mind "I'm not going to die from this."

She was referred to Professor Hacker, who saw her during one of his regular bi-monthly clinics in Canberra.

Professor Hacker also recommended a radical hysterectomy, but she refused. She sought a second opinion and received the same advice. She discussed it again with Professor Hacker and he told her that he would consider a radical trachelectomy if a second cone biopsy showed clear surgical margins.

Professor Hacker said, "Radical trachelectomy is a compromise operation for patients with Stage 1B cervical cancer who want to try to retain their fertility. The treatment is still experimental, and patients have to understand that there is a small, but definite, increased risk of recurrent disease. In addition, because most of the cervix has been removed, there are problems with conception, and an increased risk of mid-trimester miscarriage or premature delivery."

Carolyn said that she was perfectly happy to accept all of these risks and she underwent a successful radical trachelectomy in early June. She is very confident that everything will turn out well for her.

Carolyn has big plans. Having returned to work after a couple of months, she's intending to go round the world – visiting Nepal, Egypt and Mt Everest – before returning to have a baby.

Carolyn has full confidence in the future and says her message to all women is – "Have a Pap smear!"



"A big thank you to Professor Hacker and his team for performing the trachelectomy operation I wanted to try, in an attempt to save my fertility and remove the adenocarcinoma of the cervix. They were all lovely and their support helped me. I wish him and his team all the best for their future research." Carolyn Beath

Research Presentation draws major donations to tackle Ovarian Cancer

Two major donations were announced at the Research Presentation by the GO Fund at the Garvan Institute of Medical Research on November 25.



GO Fund Chairman, Steve Eckowitz

Steve Eckowitz (left), GO Fund Chairman, welcomed and thanked guests, with his prediction "It's not just a case of if, but when, the GO Fund will find a blood test

for early diagnosis of ovarian cancer. All we need is the money to do it."

To great applause, special guest speaker, Malcolm Turnbull, newly elected Liberal Federal Member for Wentworth, announced that the Turnbull Foundation would donate \$25,000 towards the GO Fund's research at the Garvan.

There wasn't a dry eye in the house when the first four minutes of the



Eva and Alina Korda

If you would like to borrow a copy of the GO Fund video to show to groups, workmates or friends, please contact Jenny Mansell on 02 9382 6283.



Terri Sissian, Prof Neville Hacker, Vivian Greig

new GO Fund video was previewed, showing how patients and their families are affected by the disease. The video, which will be available in a few weeks, was produced by John Worrell who had lost his wife to ovarian cancer. John and his partner Bev Hadgraft, had kayaked and cycled round New South Wales for over four months to raise awareness of the disease, and funds for the GO Fund. Professor Neville Hacker explained how difficult it is to diagnose ovarian cancer and what problems face the surgeons who operate. Treatment is also an issue, in that varying stages of the disease and varying types of ovarian cancer require different approaches.

Dr Philippa O'Brien, who leads the GO Fund team at the Garvan Institute, predicted that with the



Wendy Plunkett, Megan Pearson-Craig, Trish Vanden Berg

advancements we have made so far, we have a real chance of finding ways to better diagnose and treat ovarian cancer. (see *Research Report centre page*)

Karen Ehrlich's* son, Marcus, was also a guest speaker. Marcus has followed in Karen's footsteps and is an Arts Law student at the University of NSW and a

Councillor on Woollahra Council. He said how proud his family is that the GO Fund is running a campaign in his mother's memory.



Marcus Ehrlich

*See article on Karen Campaign

Following the presentation, another \$25,000 donation was announced by the Eckowitz and Reid families: Steve & Terry, Kelly & Ryan Eckowitz, and Tammi & Jeremy Reid. Tammi, Kelly and Ryan lost their mother, Sheryl Eckowitz, five years ago from ovarian cancer.

A Christmas hamper was auctioned and raised a further \$1,600. Guests were treated to a lovely supper, and wines donated by Beringer Blass, which had been organised by Eva Korda, a GO Fund volunteer.



From left: Professor John Shine (Director, Garvan Institute), Dr Philippa O'Brien (GO Fund Team Leader at the Garvan), Senator Connie Fierravanti Wells, Malcolm Turnbull MP, Professor Neville Hacker (Director, Gynaecological Cancer Centre, RHW), Professor Rob Sutherland (Director, Cancer Research Program at the Garvan)

Legal Profession embraces Karen Campaign

For the last few months, the GO Fund has been running a fundraising campaign in the NSW legal profession in memory of Karen Ehrlich. Karen was a brilliant, young lawyer who was diagnosed with ovarian cancer in 1993. She was one of the original members of the GO Fund Committee and had planned to run a fundraising campaign amongst the legal profession, but lost her battle with ovarian cancer before this could begin.

The lawyers, barristers and judges rallied with their donations, and law firms engaged in some pretty innovative fundraising in order to win. The prize winners were announced at the Garvan Cocktail Briefing on November 25, with first and third prizes being won by Baker & McKenzie, who did an outstanding job, and second prize going to Sparke Helmore.

The Baker & McKenzie staff really threw themselves into the Campaign and not only raised the most money, but came up with a pretty glamorous way of raising it. They held a "Get Glam, Gorgeous and GO" Fundraiser at their offices with hairdresser, Joh Bailey, and model/author Tali Shine. Staff were invited to have their hair and nails done, given makeup tips and makeovers. Raffles were run, and a cocktail party held in the evening to cap the day.

As an addition to the Glam Day, they also invited staff to go out on a yacht, as long as they donated to the cause.

Jennifer McIver and Michelle Koch, who had organised the fundraising, were delighted to accept their winning prizes - a business class return trip for two to Europe courtesy of Emirates, and His and Hers Raymond Weil timepieces. The prizes will be auctioned off and the money donated back to the GO Fund. "We had so much fun organising it, we want to do it again next year," they said.

Sparke Helmore, who won the most innovative prize - His and Hers custom made suits by Joe Cutrone to the value of \$2,500 each - not only donated, but have placed the GO Fund on their payroll deduction scheme and have offered staff time to the GO Fund. *(From a lone fundraiser's point of view, this is wonderful!)*

The feedback from the Campaign was so encouraging that we have been asked to run it again next year, which we will, from February to September. Baker & McKenzie are challenging the law firms in NSW to try to beat them next year!

The fundraising and donations from the Campaign totalled \$33,000. Thank you to all those who donated and those who fundraised. We hope the spirit of Karen Ehrlich will carry on for many years to help us find that blood test for ovarian cancer.

Thank you too, to our sponsors:



Jennifer McIver, Pro Bono Coordinator at Baker & McKenzie with Joh Bailey



Jenny Mansell, Fundraiser at the GO Fund, with Michelle Koch from Baker & McKenzie, one of the organisers of the Glam Day



Hair and makeup were all part of the Glam Day



A day on the Harbour for Baker & McKenzie staff

Initial shock turns to joy

Three years ago, Charlotte McKeown was facing the worst news of her life. Having just been told she had ovarian cancer at the age of 30, Charlotte was devastated. She was engaged to be married and wanted to have children, but was faced with the prospect of having to undergo a hysterectomy.

Today the news that turned her world into chaos is long past and Charlotte is now married to Simon and nursing a beautiful little baby called Ella Grace. Back in 2001, Charlotte recalls she had a swollen stomach, back pain, lethargy and was losing weight. "I was having sleeps in the middle of the day," she says, "and that's not right for a 30-year-old."

While in Melbourne visiting her parents, her mother was concerned at

Charlotte's appearance and decided to take her to her gynaecologist. Scans showed a large growth on her ovary and she was told she had cancer. Charlotte returned to Sydney in a state of shock. Her doctor referred her to Professor Hacker at the Royal, who operated on Charlotte, removing the large ovarian tumour, but retaining her uterus and other normal ovary.

Professor Hacker said "The tumour proved to be an endodermal sinus tumour, a rare but highly malignant germ cell type of cancer. Such tumours usually occur in young women and children. Although uniformly fatal in the past, they are now very sensitive to modern chemotherapy and it is possible to preserve child bearing capability."

"I was so happy, thrilled in fact," she says, "It made the four months of chemotherapy a lot easier, even

though I lost my hair."

Following the treatment, Charlotte and Simon still had to wait two years to make sure that the cancer had not returned before she could get pregnant. When the tests showed that the cancer had not returned, Charlotte was delighted to discover that she was pregnant within nine days.

Charlotte admits that having cancer changes you. However, for her it has been a positive experience. "I'm so much more optimistic than before. I don't get stressed anymore and I am looking forward to having another baby."

Charlotte's main reason for her optimism is the care she received from Professors Hacker and Friedlander, as well as the nursing care at the hospital. "I knew I was in good hands," she says.

"Never give up" - Deborah's motto

It was 1989 and an ideal time in her life for young 20-year-old university student, Deborah Gardiner. In her final year of a Bachelor of Commerce degree at the Australian National University, Canberra, Deborah was looking forward to completing her studies and celebrating her 21st birthday party.

However, the studies came to a sudden halt when Deborah was diagnosed with ovarian cancer. She had severe abdominal pain for two months, and following an ultrasound, her doctor told her she had a tumour 11cm in diameter on her ovaries.

"There were only two alternatives at the time," said Deborah, "Either see Professor Hacker at the Royal which was at Paddington then, or go to Adelaide." Following her operation at the Royal, which was to become the first of eight operations over a period of six years, Deborah was in hospital for three weeks and was so sick from the chemotherapy, she had to quit university.

The cancer returned, and following another two operations, Deborah

underwent a bone marrow transplant, following chemotherapy. In 1992 a tumour appeared on her lungs and two operations followed.

When her last two operations on her bowel, which had been affected by radiation treatment, were done, Deborah decided to finish her university course in 1995 and graduated.

Although she had to undergo so many operations, chemotherapy and radiation treatment, Deborah says that she was glad it was her and not one of her family or friends.



"I wouldn't want anyone else to go through what I did. It was harder for my family and friends who watched and coped with my illness, and who always tried to make me feel better. I could not have done it without them. It meant a lot to me to have their support."

Since then, Deborah says she has generally had good health, despite side effects from her treatment. She appreciates the support her family have provided and says that her energy levels are now returning.

"I am a very happy and grateful person," said Deborah. "The team at the Royal were marvellous. If you don't give up, they won't. I'm so glad they were willing to fight alongside me."



Graduating at last!

Deborah was bridesmaid at a friend's wedding in 1997

An incredible journey

UPDATE ON PREVIOUS STORY ABOUT LISA AND JOHN BANFIELD'S EFFORTS TO HAVE CHILDREN

Despite six years of setbacks, Lisa and John Banfield are looking forward to family life with their two new bundles of joy, Joshua and Lucas.

It has been a roller-coaster ride which has brought John and Lisa to this point. Originally mis-diagnosed in New Zealand (the gynaecologist was later struck off), Lisa was diagnosed with cervical cancer in 1996. She had to undergo a radical hysterectomy.

In 1998 Lisa and John arrived in Australia and were looking forward to a new life, when Lisa discovered a lump. Although there were no other symptoms and no pain, Lisa was referred to Professor Hacker at the Gynaecological Cancer Centre. Lisa says he listened carefully, took a biopsy and then operated that day.

"He was so patient and caring and was very concerned about me," said Lisa. "This man is incredible!"

When Professor Hacker operated to remove the tumour, he pinned Lisa's ovaries up so that they would not receive the full blast from the radiotherapy which was to follow. The operation took 3½ hours. Unfortunately, although the ovaries were high in the abdomen, the scatter of radiation or the powerful chemotherapy caused them to stop functioning.

"At that stage," recalls Lisa, "I had not only lost the ability to carry a baby, but also the ability to provide the eggs. I was told that I had a 50% chance of living 18 months. But my husband kept me going, and the staff at the Royal Hospital for Women were wonderful. They were all such a comfort."

John and Lisa are both very athletic, and once Lisa had recovered from the chemotherapy and radiotherapy, they were back riding mountain bikes together and she was doing yoga. (Lisa had won an athletic scholarship to the University of San Diego when she left high school.)

"Every day I wake up and wonder if the cancer has come back, but all bad thoughts disappear when I ride my bike," said Lisa, who has been riding bikes since the age of 3.

Lisa says she owes her survival to the

work of Professor Hacker at the Gynaecological Cancer Centre. "I'm eternally grateful for this second chance at life," said Lisa. "And it is all due to these unbelievable people at this awesome hospital in Randwick. Thinking and caring is so rare these days. You want them to discover something in their research because of the time, effort, and expertise they put into all this treatment."

The couple decided to wait a couple



John and Lisa Banfield with Professor Hacker

of years before seeing what they could do about having a baby. After about 18 months, a girlfriend of Lisa's offered to be a surrogate mother, using Lisa's sister's eggs. They formed 19 embryos and the girlfriend tried five times, but it didn't work.

When Lisa started having pain round her waist, Professor Hacker ordered an ultrasound to see if the ovaries might be causing the pain. To everyone's surprise, they found that Lisa's ovaries had begun ovulating again, even though she had gone through all the symptoms of menopause three years earlier.

With her new eggs formed into three embryos by IVFAustralia, Lisa and John set off to America in 2002 for another attempt with a new surrogate mother. They were

paired up with a Mrs Prelewicz by CSP (Centre for Surrogate Parenting) in California, USA.

However, in March 2003, the Australian Government introduced laws banning embryos being taken out of the country. Lisa lobbied the Government until she won an amendment to the laws, allowing her to take the embryos to America.

To Lisa and John's delight, Mrs Prelewicz became pregnant in May,

but she miscarried. After another attempt, she became pregnant again and the twin boys were born in late April, 2004. It was an incredibly emotional time for the Banfields and their families, as well as Mrs Prelewicz who was so happy for them.

A few weeks later, Lisa and John arrived back in Australia with

their new boys. It had been a long journey, and there were many hurdles to overcome, but they had finally made it.

Lisa's update: On the 10th October we had a naming day celebration for Joshua and Lucas. We invited Professor Hacker and his wife, Estelle, to this very special occasion. We asked Professor Hacker to read a reading at this celebration because we believe without this man and the team he heads up, Lisa AND Joshua and Lucas wouldn't be here today.



Joshua and Lucas

BEQUEST CLUB

If you are thinking of leaving a gift to the GO Fund in your will, why not become a member of the GO Fund Bequest Club.

You can enjoy the company of others who will be acknowledged now as well as later, and your actions will encourage others to do likewise. Or you may wish to let us know of your intentions, but don't want the fanfare and would prefer to remain unidentified.

It will be a comfort to know that you will be leaving a legacy which will improve the future of many women and one day save lives.

Please contact Jenny Mansell on 02 9382 6283.



Put it in your diary



Our Cocktails for Cancer – Love her enough to save her life – cocktail party will be held at the Sofitel Wentworth on Thursday, February 10, 2005.

Tickets can be purchased online at www.gofund.org.au on the events page.

This newsletter has been proudly sponsored by



International Meeting of Gynaecologists elects Australian President and showcases work of our Gynaecological Cancer Centre



Ellen Barlow with her poster

The 10th Biennial Scientific Meeting of the International Gynaecological Cancer Society (IGCS) was held on October 3rd-7th in Edinburgh, Scotland. This was the largest meeting of the Society to date, with over 2000 registrants.

The society has grown in stature over the years, and is now clearly the pre-eminent Society for gynaecological cancer in the world. Professor Michael Friedlander, our medical oncologist at the Gynaecological Cancer Centre, was installed as the 11th President of the Society at the meeting. He follows in the path of Professor Neville Hacker, who was the 5th President of the Society, and presided over the meeting in

Fukuoka, Japan, in 1997.

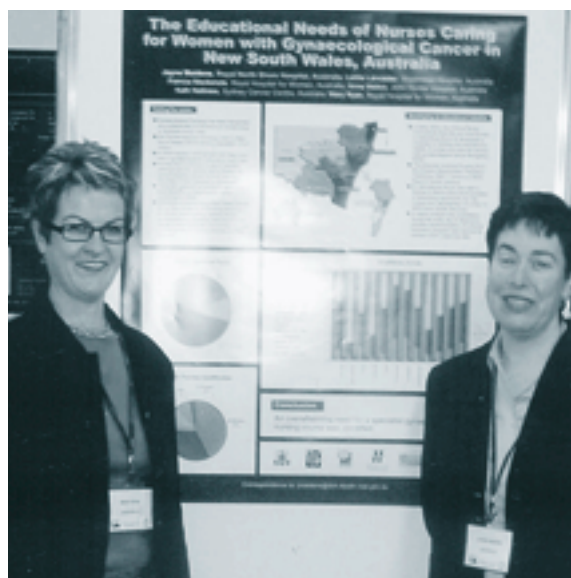
It is unprecedented for one centre to provide two Presidents to this Society, and is indicative of the high regard in which the Gynaecological Cancer Centre is held worldwide.

The meeting provided an excellent interchange of scientific ideas, and was an opportunity for the Gynaecological Cancer Centre to present some of its work.

Professor Hacker spoke on the management of vulvar cancer, Professor Friedlander spoke on chemotherapy for ovarian cancer, Dr Viola Heinzelman-Swartz presented some of our genetic research findings on ovarian cancer from our Garvan collaboration, while Clinical Nurse Consultant,

Mary Ryan, presented a paper on lower limb lymphoedema following lymph node resection for various gynaecological cancers.

Poster presentations were shown by Clinical Nurse Specialist, Ellen Barlow, on vaginal function following treatment for cervical cancer, and Dr Sue Valmadre, on management of bulky positive lymph nodes in vulvar cancer.



Mary Ryan and Jayne Maidens with their poster

More time for the patient

A visiting Obstetrician/ Gynaecologist from Milan, Italy, has observed that the amount of time spent with a patient here at the Gynaecological Cancer Centre, is 3-4 times more than in Italy.



Dr Gianpiero Polverino

Dr Gianpiero Polverino was here on a four-month visit as a clinical observer to gain experience from Professor Hacker and the team at the Royal. During his time here he learnt much that he can take back to the Mangiagalli Clinic at the University of Milan.

"I have learnt a lot about the way you do things here – the organisation, administration, surgical techniques, and most importantly, the amount of time you spend with the patient. We do not have the luxury of time at my clinic when we have to see so many people," he said.

Dr Polverino is in his last year of sub-specialty of Gynaecological Oncology. While he was studying medicine, a friend of his impressed him so much when talking of his work, that he made the decision then and there, not to become a general surgeon, but to specialise in gynaecological oncology.

"I read Professor Hacker's text book at University and had always wanted to

come here because he is world-famous for his work."

Even when he returns to Milan, Dr Polverino will still have to deal with the large numbers of people to be treated in a city of 5.3 million people.

"The system in Italy is mostly a public system. There are private hospitals and private insurance, but only for the wealthy and those who receive it through work benefits.

"Everyone wants to come to our hospital because of the standard of the doctors. However, with so many people to see, we cannot spend as much time with them as you would here. Research is also an area I would like to spend more time on, but the hours in Milan are long and any research must be done at night."

This is the doctor's first visit to Australia and he says he likes the quality of life here. Before he returns to Italy, he will be going diving in the Whitsundays. "Everyone tells me how lovely it is there."

Amanda's experience with Ovarian Cancer

My thoughts, feelings, beliefs and hopes about the world were very optimistic. During the last century there had been a decline in major infectious diseases and the medical advances targeting diseases were great. My age, sex, race, gender, genetic makeup, lifestyle, living and working conditions enabled me to believe I had some understanding of the world I lived in and some control over my health. Also, I believed as Hans Seyle said "It's not what happens [to you] that counts; it is how you take it."

However, these beliefs changed in 1997 when I was diagnosed with an ovarian tumour and admitted to The Royal Hospital for Women. I felt I had no control of my body! I was confronting my image of my body, my sexual function, my fertility and perhaps my mortality.

However, I believed I had arrived in a "safe place", a place I could understand and be understood.

My scar from surgery "lets the light in" and all that I never understood before I understand now. I understand the great devotion of the staff at The Royal Hospital for Women. In particular, Professor Hacker, and the medical, nursing, administration and support staff. Prof Vancille (Endogynaecology Unit) and the staff at IVF East. In addition, I would like to thank Michael Hart, Judy and Jimmy Micallef, Helen McGilligan, Robert Micallef & The Vince Gelanease Band and all who supported The Ovary Party which raised money for the Go Fund.

The following quote, which I read on a head stone in the Northern Territory, is dedicated to you all:



Amanda with her partner, Michael

"...It is not the critic who counts, or how the strong man stumbled and fell or where the doer of deeds could have done better

The credit belongs to the man who is actually in the arena

Who knows the great enthusiasms, the great devotion

and spends himself in a worthy cause.

If he fails at least he fails while daring greatly

So that he will never be one of those cold and timid souls

Who know neither victory nor defeat".

Editors note: Following her treatment, Amanda organised three Ovary parties to help raise money for the GO Fund.

Rural and City Gynaecologists working together

In September, the Gynaecological Cancer Centre held another rural network meeting at the Royal Hospital for Women.

These meetings are an opportunity for doctors, nurses and paramedical workers at the Centre to meet with referring gynaecologists from rural areas, along with their nursing and paramedical staff. A program committee of three gynaecologists, Dr Martin Baylis from Tamworth, Dr Chris Halloway from Bathurst and Dr Anne Sneddon from Canberra, made suggestions for topics they would like discussed, and staff at the Gynaecological Cancer Centre provided a series of lectures.

The main focus of the day was on getting to know each other and learning how to facilitate the smooth transfer of patient care back and forth between rural areas and the city. The lectures, as usual, were followed by a lot of fairly informal discussion, which continued into the tea and lunch breaks. CYTYC, manufacturers of ThinPrep, once again entertained participants at an excellent dinner in the evening at the Pier Restaurant in Rose Bay.



Dr Martin Baylis (Tamworth),
Wendy Newell (Tamworth)



Dr Janelle McDonald
(Canberra) and Dr David
Greening (Wollongong)



Dr Liz Gallagher (Canberra), Professor Neville Hacker,
Dr Steve Robson (Canberra)



Dr Tony Geraghty (Dubbo),
Dr Cathy Lee (Dubbo),
Dr Geoff Jackel (Dubbo)



Dr Bipin Gupta (Tamworth)



GO FUND

PO Box 1045 Randwick NSW 2031
Tel: 02 9382 6283 Fax: 02 9382 6200 www.gofund.org.au

JANUARY 2005

My gift towards finding a cure for gynaecological cancer

Date _____

Title _____ First Name _____ Surname _____

Address _____ State _____ Postcode _____

Tel (h) _____ (w) _____ Mobile _____

Email _____ Fax _____

My personal reason for donating: _____

\$500 \$100 \$50 Other \$ _____

Cheque/Money order attached **OR**

Please charge my Visa Mastercard Bankcard Amex

Card No

Name of Card Holder _____ Expiry Date _____ / Signature _____

Ongoing Support
Please charge \$ _____
monthly to my credit card
until I advise otherwise.

Thank you for your support!

Donations to the GO Fund are tax deductible. A receipt will be mailed.

Ovarian Cancer – Research Holds the Answers

THE GO FUND'S 2004 RESEARCH REPORT

The biggest problem with diagnosing ovarian cancer – the 5th highest cancer killer in women – is the lack of early warning signs. Therefore, 75% of women present with advanced stage disease. Despite some improvement in 5-year survival rates over the past 20 years, the outlook is still poor, the overall survival being only 40%. This figure will be dramatically improved if we can find a way to pick up early stage disease, which is therefore the major goal of our research.

Research Goals

- To find a blood test for the early detection of ovarian cancer, to allow population-based screening;
- To find molecular treatment options for women with advanced disease;
- To identify ways to predict patients who will do poorly or do well so that more appropriate treatment can be given.

To achieve these aims, we need to know:

- which genes are behaving abnormally in ovarian cancer;
- how the genetic changes cause ovarian cancers to develop and progress.

GENE CHIPPING: Genetic profiling of cancer

We have known for some years that cancer is a disease that is controlled by our genes and how they are turned on and off. Normal cells maintain a balance between cell division and cell death. Cancer cells



have alterations in the genes that control this division, resembling a car accelerating out of control with no brakes.

Researchers have now developed ways to use the information from the Human Genome Project, which identified all of the genes in the human body, to identify the genetic alterations underlying a particular cancer. The researchers at the Garvan Institute are using GeneChip® technology to determine which genes are turned on or off in ovarian cancer.

The researchers take an extract from the cells of ovarian cancer tissue, which is a copy of the DNA that is turned on in those cells, and label it with a fluorescent dye. They then pass it over a GeneChip®, which contains short pieces of DNA corresponding to individual genes of the human genome. The DNA copy will bind to their complementary DNA partners on the chip. When fluorescent light is applied, a glow signal appears where those genes that are turned on have bound. Using computer software, the differences between cancer extracts and normal ovaries can be compared to determine which genes are turned on or off in ovarian cancer.

The Garvan Institute is the first research institute in Australia to introduce this technology on a large scale. We have now profiled 51 ovarian cancers using GeneChipping. Using many samples means we are more likely to identify genes affected in all women with ovarian cancer and not individual differences between women.

In addition, the GeneChips used in our study, part of a collaboration with a company in the US, are the most advanced available in that they contain

DNA that corresponds to over 90% of the human genome, approximately 30,000 genes. The combination of a large number of samples and a comprehensive GeneChip® puts us at the forefront of this type of research in ovarian cancer.

How do we go from identifying genetic abnormalities in ovarian cancer to developing a tumour marker?

We now have a vast amount of information about which genes are abnormal in ovarian cancer. The challenge now is to define which genes are actually causing the disease, which changes occur early in the disease process and thus have potential to form the basis of an early detection test, and which genes or their protein products represent potential new treatment targets. This part of the research is the most challenging and time-consuming, and requires as much scientific and clinical expertise as we can gather to increase the likelihood of success.

Essentially, this part of the research has two parts: selecting "candidate" genes with clinical potential via a

variety of strict criteria; and validating their selection using high throughput experiments on large numbers of ovarian cancer patients to determine if further studies are warranted.

What have we achieved to date?

Over the past year we have analysed over 20 different "candidate" gene targets and identified a number of genes with potential clinical application. A few examples are:

- tumour markers that can differentiate the mucinous type of ovarian cancer from other ovarian cancers and from cancers that have spread to the ovary from the intestine. This is particularly important in determining the correct chemotherapy for patients with this type of ovarian cancer, as this will have a major impact on patient survival;
- genes that produce proteins that reside on the surface of ovarian cancer cells and are therefore accessible for "magic bullet" approaches to selectively target and kill cancer cells but not their normal counterparts. Specifically, we have identified one such marker that is present on ovarian cancer cells and which acts as an entry point for a new type of

treatment already under proposal as a novel therapy for breast cancer;

- genes that can be analysed at the time of diagnosis and can be used to predict patient outcome. This will aid in determining which patients should be treated aggressively and which patients are likely to do well without treatment, thus avoiding over-treatment where unnecessary. This will also assist the patient in making informed decisions in relation to her treatment.



What about a blood test for early detection of disease?

Our research continues to strive toward this important goal. However, we still need to understand more about the early stages of ovarian cancer and the genes that are critical to its development before we can begin to identify ways of achieving this aim.

We have no doubt that the power of GeneChipping technology combined with the scientific and clinical expertise of our multi-disciplinary team of scientists at the Garvan Institute and clinicians at the Gynaecological Cancer Centre at the Royal Hospital for Women, places us in a unique position to identify and test genes for their direct relevance to our clinical aims.

We are confident that we now have a real chance of finding ways to better diagnose and treat ovarian cancer.



• **Research** • **Treatment**
• **Awareness** • **Prevention**
of Gynaecological Cancer

www.gofund.org.au ABN 670 629 86109

PO Box 1045 Randwick NSW 2031
Gynaecological Cancer Centre,
Level 2, Royal Hospital for Women,
Barker St, Randwick
Tel : 02 9382 6283
Fax : 02 9382 6200
Email : mansellj@sesahs.nsw.gov.au