



- 08.00 Registration, refreshment and exhibition
- 08.50 Welcome, *Melanie Davies, Consultant Gynaecologist, Chair, Fertility Preservation UK, University College London Hospitals*
- 09.00 Cancer in young people, long term outcomes, *Vicky Grandage, Consultant Haematologist with an interest in late effects, University College Hospital London*
- 09.30 The effect of cancer treatment on male fertility and sperm banking, *Allan Pacey, Professor of Andrology, University of Sheffield*
- 10.00 The effect of cancer treatment on female fertility and an overview of female fertility preservation, *Richard Anderson, Professor of Clinical Reproductive Science, MRC Centre for Reproductive Health, University of Edinburgh*
- 10.30 Refreshment and exhibition
- 11.00 Oocyte cryopreservation, *Gillian Lockwood, Medical Director, IVI-Midland*
- 11.30 Ovarian transposition for fertility preservation, *Ertan Saridogan, Consultant in Reproductive Medicine and Minimal Access Surgery, University College London Hospital*
- 12.00 What factors influence the decision-making process for women contemplating fertility preservation?, *Georgina Jones, Professor of Health Psychology, Leeds Beckett University*
- 12.30 Lunch and exhibition
- 13.30 Clinical experience of a fertility preservation service- analysis of outcomes, *Stuart Lavery, Director IVF, Imperial College*
- 14.00 Ovarian stimulation for oocyte cryopreservation, *Julia Kopeika, Consultant Gynaecologist Subspecialist in Reproductive Medicine, Assisted Conception Unit, Guy's Hospital*
- 14.30 Uterine transplantation, *Ben Jones, Post-doctorate Clinical Research Fellow, Imperial College NHS Trust*
- 15.00 Refreshment and exhibition
- 15.30 Ovarian tissue preservation, *Sheila Lane, Consultant Paediatric Oncologist, Oxford University Hospitals NHS Foundation Trust*
- 16.00 Effects of cancer treatment: early menopause and the use of HRT, *Melanie Davies, Consultant Gynaecologist, University College London Hospitals*
- 16.45 Close



## Victoria Grandage, Consultant Haematologist with an interest in late effects, University College Hospital London

Dr Victoria Grandage has been a Consultant Haematologist at University College Hospital London since 2007. She works with patients within the TYA age bracket with haematological disorders predominantly malignant.

Dr Grandage also has a specialist interest in late effects and consequences of treatment. She has led the development UCLH late effects service which is now one of the largest services for adult survivors of childhood cancer in the UK. She is a member of the CCLG late effects steering group and is involved in a number of projects Nationally relating to fertility and late effects.

### Cancer in young people, longterm outcomes

Learning points:

- 1) Definition and prevalence of late effects
- 2) Factors affecting the risk of late effects.
- 3) Aims of late effects follow up

The incidence of cancer in the UK has increased year on year with over 80% of teenagers and young adults becoming long term survivors. The burden of late effects after childhood cancer is dependent on tumour, treatment and host-related factors, such as age at diagnosis, gender and genetic predisposition. Detailed knowledge of these has been gained from two important cohort studies one in the USA and one in the UK. At 30 years after a cancer diagnosis, the US Childhood Cancer Survivor Study (CCSS) reported 73% patients had at least one chronic health condition; classified as severe, disabling or life-threatening in over 40%. Survivors therefore require lifelong holistic care focusing on the medical issues, psychosocial, educational and vocational implications of living beyond cancer.

## Allan Pacey, Professor of Andrology, University of Sheffield

Allan is Professor of Andrology at the University of Sheffield School of Medicine. He is currently the chairman of the Steering Group for the UK National External Quality Assurance Scheme for Andrology and the Editor in Chief of the BFS journal Human Fertility. He was until January 2015 the Chairman of the British Fertility Society and served as BFS Secretary between 2005 -2010. In the 2016 New Year's Honors list, he was awarded an MBE for Services to Reproductive Medicine.

### The effect of cancer treatment on male fertility and sperm banking

Learning points:

- To understand the background to cancer in the male and how it affects fertility
  - To be aware of the process of sperm banking and how males make the decision to bank
  - To understand long-term fertility outcomes of survivors and the importance of fertility monitoring.
- Sperm banking is a cheap and effective way of preserving the fertility of postpubertal males who face a risk to their fertility of medical treatments such as chemotherapy and radiotherapy. However, the organisation of services to maximise uptake continues to be a challenge and men often find making the decision quite difficult. However, in the longterm the fertility prospects for most men are quite good after the end of treatment, with many regaining the capacity to produce sperm. Only about 10% of men who bank sperm, ever return to use their frozen samples. Therefore, a challenge for those running sperm banks is how to assist men to engage with fertility monitoring so that those who no longer need their banked sperm can dispose of it in a timely manner. This presentation will outline our recent research which has examined these issues and provide practical suggestions for those running sperm banks for this group of patients.



## **Richard Anderson, Professor of Clinical Reproductive Science, MRC Centre for Reproductive Health, University of Edinburgh**

Richard Anderson Completed Subspecialty training in Reproductive Medicine as a lecturer at the University of Edinburgh. After a year in Sam Yen's lab in San Diego, he was appointed to the MRC Human Reproductive Sciences Unit. Subsequently appointed to current post in the University in 2005: established a group investigating the female reproductive lifespan, with both laboratory and clinical aspects focusing on the establishment of the follicle pool in fetal life, and the assessment and mitigation of iatrogenic damage in girls and women.

### **The effect of cancer treatment on female fertility and an overview of female fertility preservation**

Key Learning points:

Range of effects of different chemotherapies; importance of age and ovarian reserve at different ages; success of oocyte cryopreservation and current data on ovarian tissue cryopreservation.

It has long been recognised that cancer treatments, including chemotherapy, radiotherapy and surgery can compromise female fertility. While the ovary is often the key organ of consideration, the uterus and less frequently the hypothalamus and pituitary gland may also need to be considered. Most of the data on pregnancy after cancer has come from children and adolescents with cancer, but recent data provide a more comprehensive overview, highlighting the importance of age as well as treatments. It is also clear that women with a higher ovarian reserve at diagnosis of breast cancer are more likely to retain ovarian function after treatment. This talk will also provide current data on the success of oocyte vitrification, and data on pregnancy rates after ovarian transplantation and replacement.

## **Gillian Lockwood, Medical Director, IVI-Midland**

Doctor Gillian M Lockwood, BM BCh. MA (Oxon) D. Phil FRCOG has been Medical Director at IVI-Midland, Tamworth ([www.midlandfertility.com](http://www.midlandfertility.com)) since 2000. Previously she was Senior Clinical Research Fellow at the Oxford Fertility Unit, where her research interests included Polycystic Ovary Syndrome, Premature Ovarian Failure and Recurrent Miscarriage. Her Doctoral Thesis was on the role of inhibin in ovulation and early pregnancy. Midland Fertility was the first clinic in the UK to achieve live-births using cryo-preserved eggs; a development that has given new hope of becoming 'genetic' mothers to young women who undergo potentially sterilising chemotherapy or radiotherapy for malignancy

### **Oocyte cryopreservation**

Oocyte cryo-preservation provides a low but psychologically and statistically significant chance of achieving pregnancy. Involvement of the entire care-team (oncologists, IVF doctors, embryologists, counsellors, parents) is vital to ensure the treatment is offered appropriately and effectively.

Establishing ovarian reserve (by AMH) is vital to set expectations as women with malignancy have reduced ovarian reserve when compared to age-matched controls.

Since Chen announced the first 'frozen egg' baby in 1986, progress with egg freezing has been advanced by improved cryoprotectants, vitrification and ICSI. Although vitrified eggs from young, healthy donors perform near identically to 'fresh' eggs, the situation for even young cancer patients is not as good as their malignancy has often compromised their ovarian reserve and their oocyte quality. A significant proportion of 'oncology' egg freezers have breast cancer and initial anxiety about the impact of even transient hyper-estrogenemia on their prognosis has been largely alleviated by follow up studies and the use of Letrozole. The possibility of fertility preservation by oocyte freezing is too often raised too late or not at all and so it is vital that oncologists have ready access to information for their patients and a seamless referral pathway, including the availability of NHS funding, to their local IVF facility that has experience of oocyte freezing.



## **Ertan Saridogan, Consultant in Reproductive Medicine and Minimal Access Surgery, University College London Hospitals**

Ertan Saridogan is a Consultant in Reproductive Medicine and Minimal Access Surgery at University College London Hospitals. He is a former President of the British Society for Gynaecological Endoscopy and a member of the European Society for Gynaecological Endoscopy Executive Committee as the Chair of Scientific Programme of Annual Congresses. He is also a member of the ESHRE and ESGE/ESHRE/WES Endometriosis Guideline Development Groups. His clinical interests include laparoscopic and hysteroscopic surgery for benign gynaecological conditions, reproductive surgery, endometriosis, fibroids and outpatient hysteroscopy. His research interests include noninvasive diagnosis of endometriosis, clinical outcomes following endometriosis surgery, outpatient hysteroscopy, and the place of screening and risk reducing surgery in women with a history of familial cancer.

### **Ovarian transposition for fertility preservation**

Ovarian transposition (OT) and ovariopexy (or oophoropexy, OP) are surgical procedures performed to reposition the ovaries out of the radiation field in order to protect ovarian function in patients receiving pelvic radiotherapy.

Ovaries are very radiosensitive and radiation doses administered for the treatment of cancers of the cervix, endometrium, rectum, bladder and pelvic lymphomas range from 30 to 60 Gy, which will uniformly induce ovarian failure. By transposing the ovaries out of the field of radiation, the ovarian dose is reduced to 5-10% of that of nontransposed ovaries. In OT procedures the ovary is detached from the uterus by dividing the ovarian ligament, whilst maintaining the infundibulopelvic ligament, and moved out of the pelvis into the upper abdomen outside the radiation field. The ovary is then fixed to the peritoneum on the anterior abdominal wall under the costal margin. In OP procedures, both the ovarian and infundibulopelvic ligaments are maintained and the ovary is moved out of the radiation field by suturing it onto a supporting structure such as the obliterated umbilical artery, iliopectineal ligament, round ligament, uterosacral ligament or the posterior uterine wall.

The procedures are most effective below the age of 30 years, and in those not receiving concurrent chemoradiation. Their use should be considered either as a sole procedure or in association with other fertility preservation methods prior to pelvic radiotherapy.

## **Georgina Jones, Professor of Health Psychology, Leeds Beckett University**

Georgina Jones (GJ) is a chartered psychologist and professor of health psychology at Leeds Beckett University having previously gained her D.Phil from the University of Oxford. She has over 15 years' experience working on social science related projects using both qualitative and quantitative methods, including leading on the development and validation of new instruments; particularly within the field of women's health; the Endometriosis Health Profile-30 (Jones et al, 2001, 2004, 2004, 2006), an electronic pelvic floor questionnaire (Radley & Jones 2004; Radley et al, 2006; Jones et al, 2008, 2009), the Polycystic Ovary Syndrome Questionnaire (Jones et al, 2004) and the Mothers & Partners Postnatal Health Instruments (Jones et al, 2011). She is currently developing a new questionnaire to measure the burden of immunoglobulin treatment for patients with primary immunodeficiency. Her EHP-30 is now officially translated into over 30 languages and is used internationally and in clinical trials by major pharmaceuticals. She has recently completed a three-year study exploring the decision-making process in women with cancer contemplating fertility preservation. Based upon these findings, she is leading on a new study to develop and evaluate a patient decision aid to help female cancer patients make decisions around preserving their fertility funded by Yorkshire Cancer Research.



## What factors influence the decision-making process for women contemplating fertility preservation?

### Key Learning Points:

- An increased understanding of the fertility preservation decision making process for women diagnosed with cancer.
- Knowledge of the key factors that hinder the fertility preservation decision-making process for women with cancer.
- An increased understanding of the impact of this process upon patient-reported outcomes e.g. quality of life, anxiety and depression.
- An increased understanding of the factors that might help women with cancer better prepare for the fertility decision.

Unfortunately, cancer treatment often results in loss of fertility. Women diagnosed with cancer and facing cancer treatment may have to make decisions very quickly regarding fertility preservation with specialist fertility services whilst planning care for their treatment of cancer with oncology services. These decisions are extremely stressful and complex and the consequences will impact on a women's quality of life for the rest of their lifetime. Therefore, it is vital they feel supported in making the right decision for them whilst also having to deal with a cancer diagnosis and its treatment. However, the existing evidence suggests that women do not feel well supported in their choices with many patients finding the process challenging and missing out on fertility care at this crucial time.

This talk will discuss the results of a recently completed three year study in Sheffield which has explored the fertility preservation decision making process in women with cancer (The PreFer Study) and a systematic review in this area recently carried out by the study team. The presentation will report on the key factors that were found to hinder the

decision making process and also explore key questions such as, why do some women with cancer of reproductive age choose not to preserve their fertility? Are there other issues purely than relationship status that impact upon the choice to freeze oocytes or embryos? What are women's level of understanding regarding oocyte and embryo freezing? What is the impact of these decisions upon quality of life, anxiety and other patient-reported outcomes? The talk will also cover the factors that might help women with cancer better prepare for the fertility decision and ensure they make the best decision for their future. Finally, the presentation will introduce the development of a new fertility preservation patient decision aid to support women with cancer – a recently funded three-year study by Yorkshire Cancer Research (The Cancer, Fertility and Me Study).

### Stuart Lavery, Director IVF, Imperial College

Mr Lavery is a Consultant in Gynaecology, Reproductive Medicine and Surgery at the Hammersmith Hospital in London. The unit has an international reputation as a centre of excellence for assisted conception and is one of the largest IVF units in the UK. Mr Lavery was a founding partner of The Fertility Partnership, the largest provider of assisted conception services in the UK. He serves on national and international pharmaceutical advisory boards. Mr Lavery is an honorary senior lecturer at Imperial College Medical School and has served on several national committees including NICE, HFEA Licence Panel and NHS England IVF Expert Advisory Group. His research interests are assisted conception, fertility preservation and preimplantation genetic testing, he has presented nationally and internationally on these topics and has over 50 peer-reviewed articles published.

### Clinical experience of a fertility preservation service - analysis of outcomes

Data on outcomes of fertility preservation programmes is sketchy, national and international collection and collation of data will help us to be able to advise patients accurately of expected outcomes.

Oocyte cryopreservation should no longer be considered experimental and should be offered by all Fertility Preservation programmes. Accurate and honest management of expectation alongside counselling and informed consent are key parts of an effective programme.

Experience in establishing a Fertility Preservation Service will be presented including analysis of demand, creation of rapid access patient pathways and utilisation of NHS funding streams. Data from 10 years of fertility preservation including



patient demographics, cycle data, freeze and thaw results as well as pregnancy outcome will be discussed. Special clinical circumstances including gynaecological cancer, treatment in teenagers and posthumous use will be included. Finally a horizon view of future fertility preservation options will be presented.

### **Julia Kopeika, Consultant Gynaecologist Subspecialist in Reproductive Medicine, Assisted Conception Unit, Guy's Hospital**

Dr Julia Kopeika works as a consultant gynaecologist at Guy's and St Thomas NHS Foundation Trust. She finished medical school back in 1999 with "Top grade of the whole Graduate Year". She completed RCOG accredited Subspecialty in Reproductive Medicine and Surgery back in 2015.

She also accomplished a PhD, studying effects of cryopreservation on genome of reproductive cells and embryos. Her novel research was awarded on a number of occasions by international scientific societies.

She has been instrumental in delivering and expanding fertility preservation service at Guy's Hospital, that provides care to the most of South East Cancer Network.

### **Ovarian Stimulation for oocyte cryopreservation**

Learning points:

Principals of fertility preservation

Random start and underlying physiology

Specific considerations for different types of cancer

This talk will give an overview of the principals of controlled ovarian stimulation, followed by tips for emergency stimulation. New data on physiology of follicular development and recruitment will be presented as a basis for understanding random start stimulation. Specific details on how to start stimulation in late follicular or peri-ovulatory phases of the cycle will be provided. The talk will also give overview how to approach fertility preservation in young post-pubertal patients, patients with lymphoma, brain tumours, oestrogen positive breast cancer, gynaecological cancers or malignancies with genetic inheritance.

### **Ben Jones, Post-doctorate Clinical Research Fellow, Imperial College NHS Trust**

After graduating in 2009, Benjamin undertook O&G training in North West Thames, before being appointed as a clinical research fellow at Imperial College London in 2015. He undertook his PhD on fertility preservation and restoration. In 2016, he became a founding member of the International Society of Uterine Transplantation (ISUTx). He is PI of the INSITU trial on uterine transplantation using deceased donors which is due to commence in September 2019.

Benjamin has published a number of peer reviewed publications and has presented internationally on uterine transplantation and various other aspects of fertility preservation. His ongoing interests include uterine transplantation, ovarian tissue preserving laparoscopic surgery, social egg freezing and endometrial transplantation.

### **Uterine transplantation**

Key learning points:

1. Outline the options to acquire motherhood in women with AEFI
2. Describe the essential anatomical and physiological considerations in UTx
3. Appreciate the different risk vs benefit ratios in deceased and living donors

Absolute uterine factor infertility (AEFI) is a term used to describe women who cannot carry a pregnancy because of either a congenital absence of a uterus or the presence of an anatomically or physiologically non-functioning uterus. It affects 1 in 500 women of childbearing age. The current options to acquire motherhood include adoption or surrogacy, both of which are associated with moral and ethical difficulties in addition to complex legal, financial and religious factors. Uterine transplantation (UTx) has now been performed more than 60 times worldwide with 15 livebirths being recorded so far.



Not only does UTX give women with AUI the opportunity to conceive and carry pregnancy, but in addition may also improve their psychological wellbeing and allow them to re-discover their own femininity.

## Sheila Lane, Consultant Paediatric Oncologist, Oxford University Hospitals NHS Foundation Trust

Dr Lane received her PhD from Cambridge University before qualifying as a doctor at St George's Hospital London. In 2007 she was appointed as a Consultant Paediatric Oncologist at Oxford University Hospitals NHS Foundation Trust. She has been involved in the development and since 2014 has been Director and Clinical Lead for the Oxford Children and Young Adult Fertility programme. This programme offers fertility preservation treatment, including reproductive tissue cryopreservation to children and young adults at high risk of premature infertility. Dr Lane has co-authored the UK Fertility Preservation Guidelines published in 2018 and is involved in a similar publication for children and young adults.

### Ovarian tissue preservation

A girl is born with their total complement of immature eggs. These develop in utero and are stored in the cortex of the ovary. Some immature eggs start to develop and are lost on a daily basis from before birth. When a girl reaches puberty one immature egg per month under the influence of the pituitary hormones will develop into a mature egg and be shed leading to the monthly cycles. For children and young adults at high risk of infertility who cannot store eggs to preserve fertility, it is now possible to store ovarian tissue.

In this talk I will discuss:

Patient selection

Procurement, processing and storage of tissue and how this differs from storage of mature eggs

Use of the stored tissue

Challenges and new frontiers

## Melanie Davies, Consultant Gynaecologist, University College London Hospitals

Melanie is a consultant in Reproductive Medicine, with interests in the reproductive effects of cancer and chronic disease (the long-term follow-up service at UCLH has seen >2000 patients), premature ovarian insufficiency, and adolescent care. She set up the egg and embryo freezing 'emergency service' at UCLH, and supervised the sperm banking service (the largest in the UK). She initiated a national network "Fertility Preservation UK" and chairs the British Fertility Society special interest group.

### Effects of cancer treatment: early menopause and the use of HRT

#### Learning points:

Effects of ovarian insufficiency

Options for oestrogen replacement

Developing 'late effects' services

Ovarian insufficiency, due to loss of oocytes, is one of the commonest long-term adverse effects of cancer therapies, and the most distressing. There is a spectrum from low ovarian reserve causing menstrual problems to overt menopause. Besides typical vasomotor symptoms, mood changes, joint stiffness and sexual difficulties, there are long-term risks of osteoporosis, premature cardiovascular disease and possibly cognitive effects. Oestrogen replacement is the mainstay of treatment, and is recommended up to the age of natural menopause. The ideal type of oestrogen treatment is uncertain. Topical oestrogen may be needed in addition to systemic treatment. Infertility needs to be addressed by egg donation, and some women will have medical co-morbidities or pelvic radiotherapy which prevent them carrying a pregnancy.