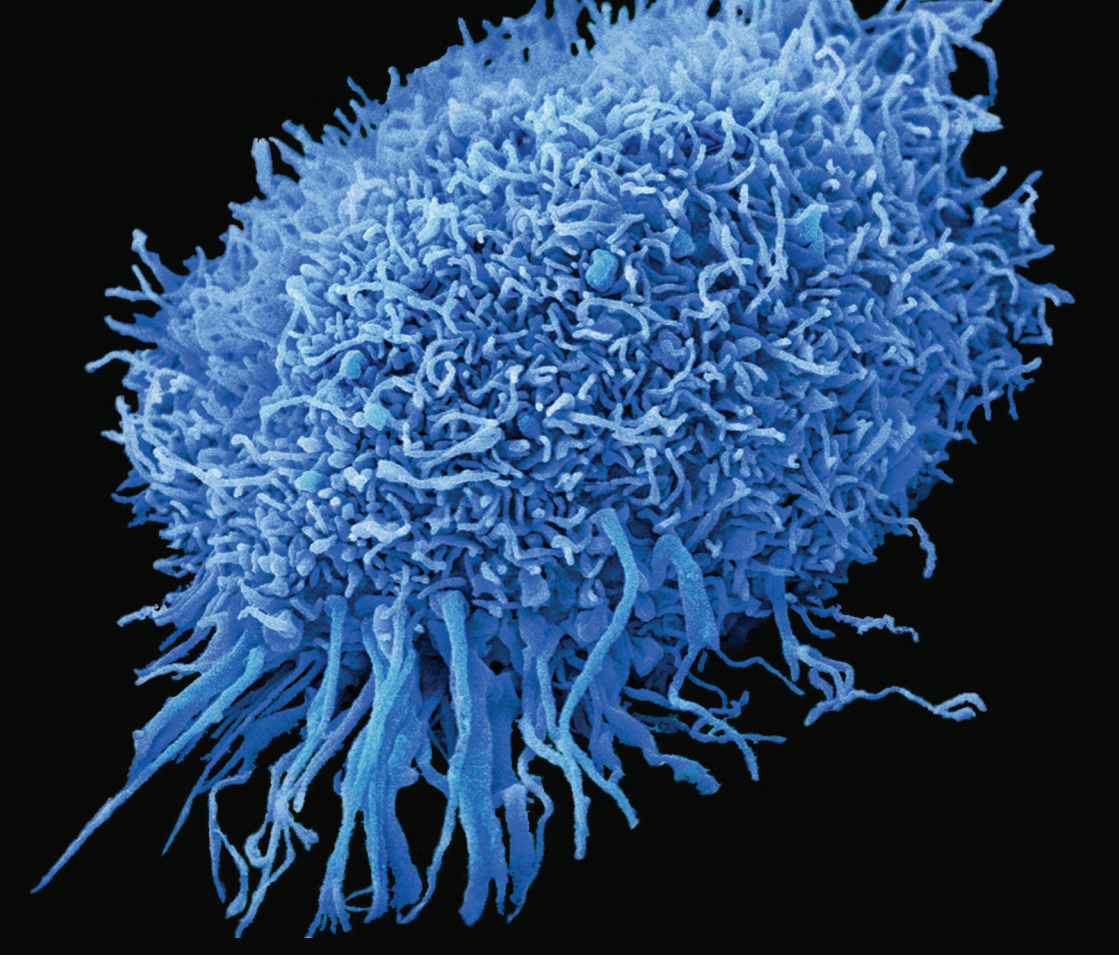


CANCER: IS TREATMENT ALWAYS THE ANSWER?

BIOCHEMICAL SOCIETY

CANCER RESEARCH UK | CARDIFF CENTRE

WELCOME

Why is it that some cancers need immediate aggressive treatment after diagnosis and others should just be closely monitored, taking a watch and wait approach? In addition, some cancers, such as prostate cancer, can be readily diagnosed and potentially overtreated whereas others, such as pancreatic cancer, are challenging to diagnose and despite aggressive treatment have a ten year survival rate of only 1%.

Today's speakers, Sunil Dolwani (Cardiff University, School of Medicine), Catherine Hogan (European Cancer Stem Cell Research Institute), Elisabeth Walsby (Cardiff University, School of Medicine), Howard Kynaston (University Hospital of Wales) and chair Vivienne Harpwood (Cardiff University, Law School) will discuss how research aims to further personalise the treatment of cancer by improving diagnosis, giving an accurate prognosis and optimising treatments to ensure a kinder, more effective outcome.

You will have the opportunity to hear different perspectives, including that of prostate cancer patient, David Hopkins, ask questions and debate whether treatment is always the best option for cancer therapy.

This event has been organised by the Biochemical Society and Cancer Research UK.

We hope you enjoy the lively talks and thought provoking debate.

WHAT IS CANCER?

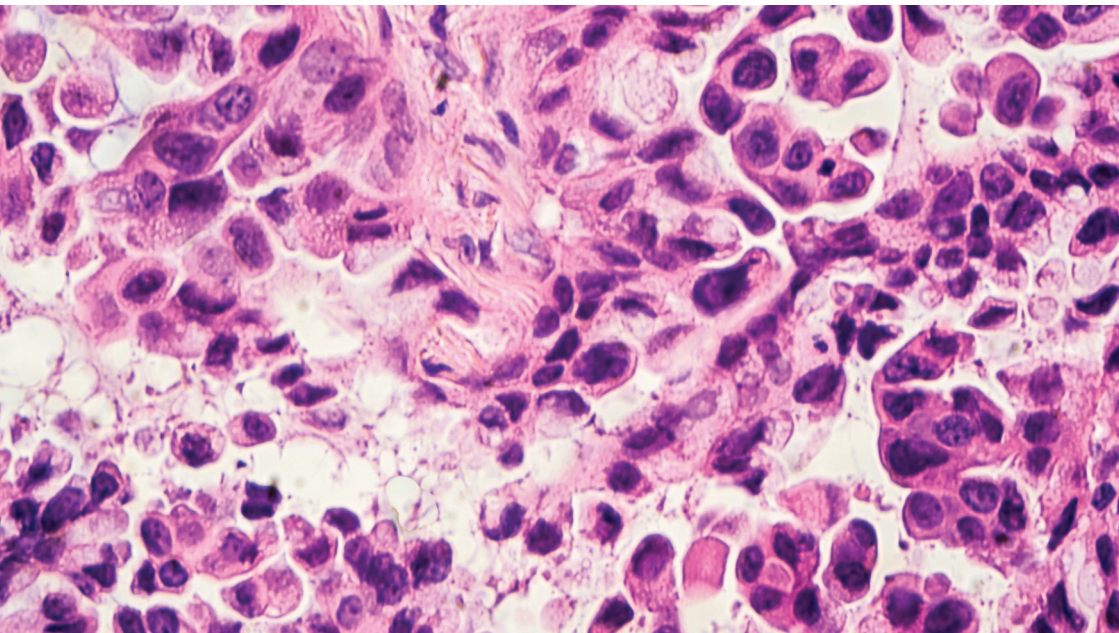
Cancer is a disease of cells.

All living organisms are made up of cells – they are the building blocks of life. Our bodies are made up of more than a hundred million cells. And there are over 200 different types of cell, with varied jobs and functions. But they also share some core similarities. Virtually all cells contain a complete set of genetic instructions (called genes) that direct every aspect of the cell's behaviour. These genetic instructions are written in a code stored in long strings of deoxyribonucleic acid (DNA). Certain mistakes (called mutations) in a cell's DNA can disrupt these instructions and start a cell on a path to cancer.

Normally genes make sure our cells grow and divide in a controlled way. Cancer starts when mutations make one cell or a group of cells grow and multiply too much. These mutations can occur by chance when a cell is dividing, they can be caused by external factors such as UV light or cigarette smoke, or can be inherited.

The place in the body where the cancer starts is called the primary tumour. Sometimes cancer can spread to other parts of the body (a process called metastasis) and form a secondary tumour.

Clinicians use staging (how big a cancer is and if it has spread) and grading (how abnormal the individual cells are) to decide how aggressive a cancer is and which treatments may work best for a patient. However, we now know that these methods are not always sufficient to give an accurate prognosis and therefore scientists and clinicians are working to find new techniques and treatment options to give a more effective outcome for individual patients.



KNOWING WHEN TO TREAT CANCER

The word ‘cancer’ tends to conjure up the idea of an aggressive disease, which grows rapidly, spreading around the body and that ultimately kills if not treated.

But this isn’t always the case. Some things that are diagnosed as ‘cancer’ can grow so slowly that they may not even cause harm in a person’s lifetime, and so don’t need any treatment.

The problem is that at the moment we can’t tell the difference between these slow growing cancers and the aggressive ones.

This ‘overdiagnosis’ is a big problem. It is particularly common in breast cancer and in prostate cancer, where we often hear about ‘tigers’ (aggressive cancers that can spread and kill) and ‘pussycats’ (slow-growing tumours that wouldn’t cause an issue in a person’s entire lifetime). Overdiagnosis is increasingly being linked to other types of cancers too.

It is therefore important to delve deeper into cancer’s biology to solve two of the most important mysteries in medicine – how to tell the difference between the cancers that can kill and the slow-growing forms of the disease that don’t, and how to track down the cancers that stay hidden until it’s too late.

Researchers haven’t been able to do this before, because of a lack of knowledge of the biological differences within a certain type of cancer, and how these differ from earlier, pre-cancerous changes they can arise from.

Thankfully, over the last decade or so, there’s been an explosion in new technologies that can analyse our genes in great detail, extract tumour cells and DNA from our blood, and study the proteins in our body and what they do in unprecedented detail.

Equally, better detection techniques would give us the ability to find aggressive cancers (like pancreatic, lung, brain and ovarian cancers) sooner. These cancers are often deadly because they’re hardest to treat when found late. They are also difficult to tell apart from more harmless lumps on scans and other tests.

Being able to distinguish between lethal and non-lethal cancer means that we could not only save lives from aggressive cancers by finding them earlier, but also reduce the harm caused by treating people with cancers that will never cause them any problems.

Abridged version of the blog entry by Emily Head, press officer for CRUK

Read the whole article at: -
http://scienceblog.cancerresearchuk.org/2016/01/15/grand-challenge-four-how-do-you-tell-the-lethal-cancers-from-the-non-lethal-ones/#mK1b2ziW2OYLeBq6.99

GRAND CHALLENGE AWARDS

How to distinguish between lethal and non-lethal cancers is one of the seven big questions in the cancer research field the are being addressed as part of the CRUK Grand Challenge award.

The CRUK Grand Challenge awards are the most ambitious cancer research grants in the world. They're intended to catalyse a revolution in how we prevent, diagnose and treat cancer by bringing together the brightest minds from around the globe. A wide range of high quality applications from over 200 institutes, spanning 25 countries, uniting over 400 world-class researchers have been whittled down to nine teams shortlisted for a £20 million Grand Challenge award. The first winning team will be announced in autumn 2016.

Read more at https://www.cancerresearchuk.org/funding-for-researchers/how-we-deliver-research/grand-challenge-award#QB8f7pxVqVHcEsBE.99

ABOUT THE CHAIR

Vivienne Harpwood (Professor of Law, Cardiff University) was appointed Chair of Powys teaching Health Board on October 1st 2014, having taken partial retirement from Cardiff Law School at Cardiff University to concentrate on her work within NHS Wales. She previously served as Vice Chair of Cwm Taf University Health Board for four years and Vice Chair of Velindre NHS Trust for eight years.

She has a strong background in Medical Law and was course director for more than 20 years of the Legal Aspects of Medical Practice (LLM) degree, the first master's degree of its kind, established in 1987.

She has published widely in the fields of medical law and is the founding editor of Butterworth's Medico-Legal Reports and the journal Medical Law International. She has given invited lectures for many years on a range of medical law issues to healthcare professionals in the UK and overseas. She has practised as a barrister, specialising in personal injury and clinical negligence work, and coroners' cases.

She served on the UK Government's NHS Complaints Review Committee, whose recommendations in 1994 form the basis of modern NHS Complaints Systems in all four UK jurisdictions.

ABOUT THE SPEAKERS

Dr Elisabeth Walsby is a Post Doctoral Research Associate in the Division of Cancer and Genetics, School of Medicine, Cardiff University. She has developed model systems that permit the study of leukaemia cells in the laboratory in conditions that are more strongly representative of the conditions found in the human body than previously available methods. These systems have allowed identification of aggressive leukaemia cells within the mixed populations of cancer cells present in the blood of leukaemia patients. Additionally, this model has helped to show us the mechanism of action of some of the emerging new treatments for chronic lymphocytic leukaemia and how these drugs could be usefully combined with existing therapies for this disease.

"Chronic lymphocytic leukaemia (CLL) can really be described as two different diseases. One is an indolent disease that progresses very slowly and the best option for these patients is to hold back on having treatment until they need it due to possible side effects of treatment. The other form of CLL is more aggressive and patients quickly progress and require treatment more rapidly. Differences identified between progressive and non-progressive disease have meant that in CLL patients are treated according to the type of disease that they have thereby saving them from the risk of unnecessary treatment and its accompanying side effects."

Dr. Sunil Dolwani is Senior Lecturer and Consultant Gastroenterologist at Cardiff University and Cardiff and Vale University Health Board. He is also the QA lead for colonoscopy for Bowel Screening Wales. His theme of research is cancer screening, prevention and early diagnosis. His research interests include the application of novel technology in the early detection and treatment of bowel cancer and the influence of new technology in enabling behaviour change and engagement with bowel cancer screening and early diagnosis. His current research includes that into risk stratified screening.

"We have strong evidence that screen detected bowel cancers are usually earlier stage than if we waited for symptoms and have a better outcome for the individual with complete cure possible in the majority. New technological advances will make it possible to have tests that are more accurate and easier for the patient to undergo. We also need to find a balance between benefit and risk and identify this at an individual level. This will enable people to make informed decisions about their cancer risk and the risk of progression from the pre-cancerous stage to advanced cancer balanced against their overall health and quality of life."

Professor Howard Kynaston has been Professor of Urological Surgery in Cardiff for about 10 years. He has trained in the UK, Australia, Belgium and Chicago and since 2002 has been the clinical lead for the ProtecT trial in Cardiff. He has special interests in urological cancer, cancer surgery, including robotic surgery, clinical trials and the National Audit in Prostate Cancer.

"The Results of the ProtecT trial demonstrate that early prostate cancer detected by screening is usually slow growing and often indolent in its behaviour compared with prostate cancer that presents clinically or other solid cancers. Long term data from trials is required to determine whether invasive treatment (with associated side effects) is beneficial and the ProtecT trial is unique in its quality and follow up. The death rates from prostate cancer are very low and at 10 years there is no difference between the monitoring and treatment groups. However, progression was found to be greater in the monitoring group, in which about half of the patients had some form of treatment. Further follow up is required to fully appreciate the very long term results."

Dr Catherine Hogan, originally from Cork in Ireland, trained in cell biology and imaging at King's College London before embarking on postdoctoral research at the MRC Laboratory for Molecular Cell Biology at University College London. Catherine is currently Research Fellow at the European Cancer Stem Cell Research Institute at Cardiff University since 2013. Her research interests lie in understanding the cell biology during the early stages of tumour formation in the pancreas.

"Pancreatic cancer is devastating disease, due to the highly aggressive nature of the illness and a lack of suitable screening methods to detect at-risk individuals. Early detection is key to improved patient prognosis. Research of pancreatic cancer has increased in recent years and has considerably improved our knowledge of the genetics and pathology of pancreatic cancer. However, our knowledge of how this disease begins and develops at the cellular level remains insufficient. Our research is working to address this 'knowledge gap'."

David Hopkins has been a patient on the ProTect Study since 2008. That period includes 5 years of active monitoring, radiotherapy in 2014, and follow-up.

Happily married with three children, five grand children and a great grandchild, he finds his days fully occupied on family matters! 'Retired' since 2008, he still manages a little consultancy, and voluntary work with 'Stop-it Now!' Wales, a charity dedicated to preventing child sexual abuse.

ABOUT THE ORGANISERS

The Biochemical Society works to promote the molecular biosciences; facilitating the sharing of expertise, supporting the advancement of biochemistry and molecular biology, and raising awareness of their importance in addressing societal grand challenges.

We achieve our mission by:

- Bringing together molecular bioscientists;
- Supporting the next generation of biochemists;
- Promoting and sharing knowledge;
- Promoting the importance of our discipline.

CRUK funds scientists, doctors and nurses to help beat cancer sooner. We also provide cancer information to the public. Our ambition is to accelerate progress and see three quarters of patients surviving the disease by 2034.To do this, we're focusing our efforts in four key areas – working to help prevent cancer, diagnose it earlier, develop new treatments and optimise current treatments by personalising them and making them even more effective. We continue to support research into all types of cancer and across all age groups. And we're keeping our focus on understanding the biology of cancer so we can use this vital knowledge to save more lives.

FURTHER LINKS AND INFORMATION

Easy to understand information on cancer:
http://www.cancerresearchuk.org/about-cancer/

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