

Parliament puts medical research under the microscope

UCL scientists presented three of the 22 featured posters at a Westminster reception hosted by the All Party Parliamentary Group on Medical Research. The reception on the lifecycle of medical research featured leading research from around the UK; it was held at the House of Commons last week.

The event showcased the UK's excellent medical research base, including the significant contribution made by medical research charities. The event included presentations by UCL scientists on: imaging tests in detecting prostate cancer; gene therapy for inherited disorders that cause blindness; and cochlear implants and hearing aids.



Dr Hashim Uddin Ahmed and the team from UCL Division of Surgery and Interventional Science (which is led by Professor Mark Emberton and funded by St Peter's Trust for Kidney, Bladder & Prostate Research) presented research on pioneering a new form of ultrasound called Histoscanning and state of the art magnetic resonance imaging (MRI) in diagnosing prostate cancer.

Commenting on this research Dr Ahmed said: "The prostate is the last organ in which imaging is not used in diagnosing cancer. Men at risk of prostate cancer are subject to tests that are deeply flawed. The first is a blood test called Prostate Specific Antigen (PSA) that can be high due to infection, inflammation and age as well as cancer - it is not specific. If PSA is high men have a biopsy of their prostate. The current biopsy test is no better than a flip of the coin. It involves inserting a needle through the rectum to take 10-12 tissue samples from the prostate. Biopsies are inaccurate because they are carried out 'blind'. Doctors take the tissue in a random manner in the hope that the cancer area will be hit. It is easy to see how cancers can be missed or the needle may just skim the edge of a high risk tumour. This leads to the man being falsely reassured that he has no cancer or told that the risk of his cancer is less than it is. Equally, important, these random biopsies pick up small cancers that the man will not die from. The test cannot reliably tell us which are life-threatening or not so many men have treatments that carry lot of side-effects. Added to this is the risk of infection from biopsy needle.



We want to change this pathway. New imaging tests show great promise in detecting prostate cancer. These are new ultrasound methods (using sound-waves) and new magnetic resonance imaging, or MRI (using magnetic pulses) to scan tissue. We have large studies in testing exactly how good these new tests are at detecting important prostate cancers. If they are accurate, then a man with a negative imaging test could avoid a biopsy. Those men with a positive test could have biopsies that are more accurately targeted to the cancer rather than just randomly fired into the prostate.”

Dr Rosemary Lovett and Dr Deborah Vickers both from UCL Ear Institute and Professor Quentin Summerfield from the University of York (funded by RNID) presented research on cochlear implants. This charity-funded research will help to improve national health policies.



Commenting on the research Dr Lovett said: "We aim to identify which children are likely to benefit most from cochlear implants and which children are likely to benefit most from hearing aids. Ultimately it will help all children with hearing loss to receive the healthcare that will most benefit them."

Professor Robin Ali and his colleagues from UCL Institute of Ophthalmology presented research on gene therapy for inherited disorders that cause blindness.

Professor Ali and colleagues in his Institute have developed and tested gene therapy for a form of inherited retinal degeneration. The condition is caused by an abnormality in a gene called RPE65. It is characterised by very poor vision at birth with progressive deterioration and loss of vision. There are currently no effective treatments available.

Professor Ali said: "Following extensive pre-clinical testing in animal models, the first patients were enrolled in early 2007, thereby establishing the world's first clinical trial of gene therapy for retinal degeneration. The patients underwent a series of tests designed to establish the effects of the therapy on vision. In 2008 the first set of results were published in The New England Journal of Medicine. These reported an improvement in vision that has now established proof of principle of gene therapy for retinal degeneration. The trial showed that the experimental treatment is safe and can improve sight. The results from this first trial are a landmark for gene therapy technology and could have a significant impact on future treatments not only for eye disease but for other currently untreatable conditions."



This complex, multidisciplinary project been supported by a wide variety of funders including the Department of Health, Medical Research Council and National Institute of Health Research and RP Fighting Blindness. The researchers are now developing clinical trials of gene therapy for other inherited retinal disorders that cause blindness in young children.

UCL's Vice-Provost (Health) Professor Sir John Tooke said: "This reception allows leading scientists to showcase their research in the presence of MPs, policy makers, representatives from the charities which fund research, other funding bodies and the media. The medical research carried out by our colleagues presented here today illustrates how world class research conducted at UCL is leading directly to patient benefit, and demonstrates our commitment to translational research that complements our international standing in fundamental science."

Further information is available at: www.amrc.org.uk/tabs_news-2010_parliamentary-poster-winners

All images courtesy Wellcome Trust

Image 1, caption 1-r: Hashim Ahmed, Jack Avery (service user at UCH), Julian Huppert (Chair of the All Parliamentary Group on Medical Research), Sue Maridaki (representing St Peters Trust charity)

Image-2, caption 1-r: Sue Maridaki, Hashim Ahmed, and Malcolm Grant (UCL's President and Provost)

Image 3, caption l-r: Joanna Robinson (RNID) and Rosemary Lovett (UCL Ear Institute)

Image 4, caption l-r: Robin Ali and colleagues (UCL Institute of Ophthalmology)