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Cheaper anti-cancer drug as effective as expensive drug in treating most common cause of blindness in older adults

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An anti-cancer drug has been proven to be equally as effective in treating the most common cause of blindness in older adults as a more expensive drug specifically formulated for this purpose.

The results of a two-year trial led by Queen's scientist, Professor Usha Chakravarthy and published in *The Lancet* (Friday 19 July), show that two drug treatments Lucentis and Avastin are equally effective in treating neovascular or wet age-related macular degeneration (wet AMD).

Wet AMD is a common cause of sight loss in older people with at least 23,000 older people diagnosed with the condition in the UK each year. Without treatment two thirds of people with this condition will experience severe loss of sight within two years of being diagnosed.

Lucentis, the drug most commonly used in the UK at present to treat wet AMD, costs about £700 per injection and Avastin costs about £60 per injection. The NHS could save £84.5 million annually based on injecting 17,295 eyes each year by switching from Lucentis to Avastin. Avastin is already used to treat wet AMD in some parts of the UK and extensively elsewhere in the world and also for other eye conditions.

Over the past five years, a team of scientists and eye specialists from 23 hospitals and UK universities, including Queen's University Belfast,

University of Bristol, University of Liverpool, University of Oxford and University of Southampton, have investigated whether Lucentis and Avastin and the way they are given are equally effective and safe.

610 people with wet AMD entered a two-year trial known as IVAN which is one of the largest ever carried out in the field of eye disease in the UK. Patients received injections of the drug into the affected eye every month for the first three months. Patients were then subdivided to receive the injections at every visit (monthly group) or only if the specialist decided there was persistent disease activity (as needed group).

The IVAN study's two year results show that sight was equally well preserved with either of the two drugs. Giving the treatment regularly every month, resulted in slightly better levels of sight which was detected through testing of near visual acuity and contrast sensitivity. The 'as needed' group received on average 13 injections over the two year period compared to 23 for the monthly treatment group. However, continuous treatment caused a higher proportion of eyes to develop a condition known as geographic atrophy which is a thinning of the retina and its blood supply.

Professor Usha Chakravarthy of Queen's University Belfast's Centre for Vision and Vascular Science, who led the research study team, said: "The IVAN results at the end of year two show that Lucentis and Avastin have similar functional effectiveness regardless of the drug received. With respect to monthly versus as needed treatment, while there was marginally better eyesight in the former, the development of atrophy is a matter of concern in the longer term."

Professor Barnaby Reeves and Dr Chris Rogers, Co-Directors of the Bristol Clinical Trials Evaluation Unit based at the University of Bristol, added: "The Bristol Clinical Trials Evaluation Unit (CTEU) is proud to have collaborated on this ground-breaking study. The 610 patients on the

trial made over 12,000 visits during the two-year study.

"About half of the sites had not previously taken part in such a trial and the high quality of the data is a credit both to them and to the CTEU staff, who provided the robust comprehensive clinical trial infrastructure required to deliver the trial successfully."

The IVAN study was funded by the National Institute for Health Research Health Technology Assessment (NIHR HTA) programme. The Belfast Health and Social Care Trust sponsored the clinical trial. Professor Ian Young, Director of Research and Development at the Trust, said: "The findings of the IVAN study will be of great importance for the management of patients with AMD throughout the world. Research to improve patient care is a key aspect of the work of Belfast Trust, and we are committed to sponsoring and leading important clinical trials of this kind which allow our patients early access to new treatments."

Bernadette Hannigan, Director of Research & Development at the Department of Health, Social Services and Public Safety, who supported the trial, said: "With increasing life expectancy and a growing proportion of older people in the population, slowing the progress of conditions like AMD is key to maintaining their independence. The IVAN trial is an example of research led from Northern Ireland with international significance - the findings have the potential to influence how AMD is managed in the future."

The IVAN study also monitored the drugs for serious adverse events which included death, heart attacks, strokes, and any other event that was life threatening, disabling or resulted in hospitalisation. These were similar for the two drugs. However, deaths occurred less frequently in the group that received monthly treatment, although there were fewer deaths overall among people taking part in the trial than were expected

based on their age and gender and national death rates. When these safety results were combined with those of a similar study called the CATT trial which was performed in the USA, the resultant findings continued to indicate fewer deaths when treatment was given monthly.

The researchers state that their findings will be of relevance to the next round of technology appraisals by the National Institute for Health and Care Excellence and could lead to important changes to the way wet AMD is treated. In the meantime, for an older person starting a course of Lucentis or Avastin, it will be important to explain the trade-off between the number of injections, and the chances of developing geographic atrophy and dying in two years.

Provided by University of Bristol