Avastin and Lucentis are equivalent in treating age-related macular degeneration

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At two years, Avastin (bevacizumab) and Lucentis (ranibizumab injection), two widely used drugs to treat age-related macular degeneration (AMD), improve vision when administered monthly or on an as needed basis, although greater improvements in vision were seen with monthly administration for this common, debilitating eye disease, according to researchers supported by the National Institutes of Health.

Of the two drugs, Avastin is most frequently used to treat AMD. However, prior to the Comparison of AMD Treatments Trials (CATT), a two-year clinical trial, the two drugs had never been compared head-to-head. Second year results were published today in the journal Ophthalmology. First year results were published in the May 19, 2011 issue of the New England Journal of Medicine.

AMD is the leading cause of vision loss and blindness in older Americans. In its advanced stages, the wet form of AMD spurs the growth of abnormal blood vessels, which leak fluid and blood into the macula and obscure vision. The macula is the central portion of the retina that allows us to look straight ahead and to perceive fine visual detail. Accumulation of fluid and blood damages the macula, causing loss of central vision, which can severely impede mobility and independence. Without treatment, most patients become unable to drive, read, recognize faces or perform tasks that require hand-eye coordination.

"Therapies for AMD require repeated treatment to prevent vision loss.

Results of this clinical trial provide evidence that long-term treatment with either drug results in a robust and lasting improvement in vision. Patients and clinicians now have valuable information to base treatment decisions," said Paul A. Sieving, M.D., Ph.D., director of the NEI.

Avastin and Lucentis block growth of abnormal blood vessels and leakage of fluid from the vessels. Lucentis was approved by the U.S. Food and Drug Administration (FDA) in 2006 for the treatment of AMD. Avastin is very similar to Lucentis but is not approved by the FDA for this purpose. Avastin is approved for other indications. Most clinicians use these drugs on an as-needed basis when there is evidence of active disease, such as fluid leakage. However, in the original clinical trials for AMD, Lucentis was administered monthly. It was unknown if as-needed dosing would produce the same long-term visual improvements achieved with monthly administration.

Thus, CATT was designed to compare Avastin and Lucentis with monthly and as-needed treatment schedules. At enrollment, patients were assigned to four treatment groups defined by drug (Avastin or Lucentis) and dosing regimen (monthly or as-needed). After year one, patients initially assigned to monthly treatment were randomly reassigned to monthly or as-needed treatment without changing their drug assignment.

At two years, visual acuity with monthly treatment was slightly better than with as-needed dosing, regardless of the drug. As measured on an eye chart, monthly treatment resulted in a mean improvement of about half a line better than as-needed dosing. Switching to as-needed treatment after one year of monthly treatment yielded outcomes nearly equal to those obtained with as-needed treatment for the full two years. Changes in retinal anatomy differed by drug and frequency of treatment, but did not have an impact on vision through two years.

"Both drugs were highly effective regardless of the approach to dosing.

There was slightly less vision gain with as-needed treatment. Patients seeking the small extra advantage of monthly treatment need to be mindful of the additional burden, risks, and costs of monthly injections. Since as-needed dosing required 10 fewer eye injections over the course of two years and yielded similar visual results, many patients may choose this option." said Daniel F. Martin, M.D., study chair for CATT and chairman of the Cole Eye Institute at the Cleveland Clinic.

Adverse events indicate development or worsening of a medical condition. They may or may not be causally associated with the clinical trial treatment, but they are always monitored and reported in any clinical trial. The median age of patients in CATT was over 80 years, and a high rate of hospitalizations would be anticipated as a result of chronic or acute medical conditions more common to older populations.

Serious adverse events (SAEs) occurred at a 40 percent rate for patients receiving Avastin and a 32 percent rate for patients receiving Lucentis. Although Avastin had a higher rate of SAEs, they were distributed across many different conditions, most of which were not associated with Avastin when evaluated in cancer clinical trials, in which the drug was administered at 500 times the dose used for AMD. Fewer doses were associated with a higher rate of SAEs, which is not a typical dose-response relationship. The number of deaths, heart attacks, and strokes were low and similar for both drugs during the study. CATT was not capable of determining whether there is an association between a particular adverse event and treatment. Additional data from other clinical trials may provide information on long-term safety profiles of these drugs when used to treat AMD.

"The dramatic and lasting improvement in vision with these two drugs is extraordinary. At two-years, two-thirds of patients had driving vision (20/40 vision or better). With previous treatments, only 15 percent of patients retained similar visual acuity," said Maureen Maguire, Ph.D.,

principal investigator, CATT Coordinating Center at the University of Pennsylvania.

Provided by National Eye Institute