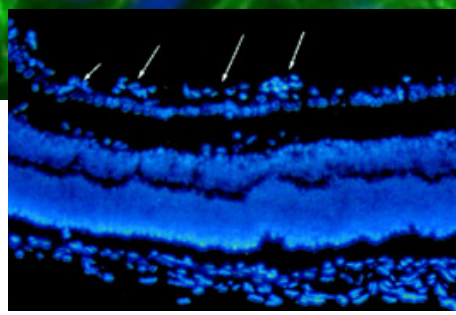
New Target for Treating Diabetic Macular Edema

Bench to Bedside: *Boulevard Study*



Even ten years ago, we didn't have an effective treatment for diabetic macular edema (DME), the major cause of blindness in diabetics. Now we have a novel treatment that targets a key molecule, vascular endothelial growth factor (VEGF). Intraocular injection of a drug against VEGF is the first-line of treatment for all DME patients. The vision improves in many of these patients.

However, these patients need frequent injections every month. "Sometimes you feel like you are losing the battle. The edema persists in the retina, and you keep injecting", says **Arup Das, MD, PhD,** Regents' Professor of Ophthalmology. These drugs are effective in only 40-50% of patients with DME.

The Roche-Genentech has now launched a new trial, BOULEVARD study in DME patients targeting a different molecule, Angiopoietin-2 in addition to VEGF. Angioppoietin-2, also called as Ang-2 plays an important role in angiogenesis and alteration of the blood-retinal barrier in diabetics. Targeting Ang-2 can be a novel approach in stopping the leakage also seen in diabetics. The UNM is one of the several centers in the country involved in this clinical trial in diabetic patients.

Paul McGuire, PhD
Professor

Every 10 seconds, three new cases of diabetes are being diagnosed somewhere in the world. Currently, there are 387 million people with diabetes around the world. This number is projected to become 592 million in another 20 years. Diabetes is fast becoming a global epidemic. "Right here in our state, about 150,000 people have diabetes, and one third of them may develop the eye disease known as diabetic retinopathy".

Under the long collaboration with **Paul G. McGuire, PhD,** Professor of Cell Biology and Physiology, Dr. Das has earlier found that Ang-2 is critical for growth of new vessels or angiogenesis in retina, and a drug that targets Ang-2 significantly blocks this process. Ang-2 also causes leakage from retinal blood vessels.

Thus, a drug that targets two important molecules (VEGF and Ang-2) at the same time may be more effective than the current monotherapy treatment of anti-VEGF drugs. "It's a great feeling to see that our bench work at UNM is finally getting translated into a clinical trial. It is the ultimate dream of the lab", remarks Dr. McGuire.

Still, the key approach in fighting this epidemic would be to tightly control the blood sugar, blood pressure, and blood cholesterol. Many landmark studies in which UNM has been a partner, have shown that tight control of systemic factors can prevent and slow down the progression of diabetic complications. Screening for early changes in the retina is also an effective way to manage this disease but access in rural areas of the State is limited. To address this need, the UNM Ophthalmology Division has recently launched a telemedicine program for the screening of diabetics throughout New Mexico.

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