MSO EXPRESS: Newsletter of the MALAYSIAN SOCIETY OF OPHTHALMOLOGY
MAY 2016

Bayer Sponsored Symposium
Speaker: Dr. Andrew Chang

What is aflibercept and what has it done to patients?

"We already have good existing treatments, but where does [aflibercept] fit in?," said Dr. Andrew Chang, Associate Clinical Professor, University of Sydney and Medical Director of Sydney Retina Clinic and Day Surgery in Australia, to delegates of the 31st Malaysia-Singapore Joint Ophthalmic Congress (MSJOC) in Pullman Kuching, Sarawak, Malaysia, where he recently talked about the drug.

The science behind anti-endothelial growth factor [VEGF] agents is already known and ophthalmologists currently have three such drugs at their disposal for clinical use: Avastin (bevacizumab), Lucentis (ranibizumab) and EYLEA (aflibercept).

According to published reports, **aflibercept** has 140 times higher binding affinity compared to ranibizumab.

While these all have slightly different properties, sizes, duration and effectiveness, Dr. Chang emphasized that there is a unique structure to aflibercept: "It traps vascular VEGF, making it unavailable to bind; when you compare the binding affinity of aflibercept to other anti-VEGF injections, it has a much greater binding affinity," he explained.

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Presenting cases based on his clinical experience using anti-VEGF injections, Dr. Chang posed important questions to the meeting's delegates: "Is the drug faster? Can it potentially dry out the retina? How quickly? Does it last longer? Is there an increased durability to this drug compared to other agents? Is it stronger? Is it more effective in eyes that have undergone other anti-VEGF therapies?"

"As a clinician in a room full of patients, especially patients that have undergone other therapies, those are the questions that we should ask ourselves," he said.

Answers to these questions, he noted, would clearly affect the burden frequency and risks of treatment, as well as the economics of therapy.

The VIEW studies[4] have provided evidence on aflibercept's increased durability. Essentially, noted Dr. Chang, the VIEW studies compared the monthly and every-2-month dosing of intravitreal aflibercept with monthly ranibizumab in patients with neovascular age-related macular degeneration (AMD).

Data showed that monthly or every-2-month doses of intravitreal aflibercept after 3 initial monthly doses produced similar efficacy and safety outcomes as monthly ranibizumab. This finding[4] demonstrates not only the efficacy of aflibercept treatment in AMD, but also that an every-2-month regimen offers a potential risk reduction from monthly intravitreal injections and the burden of monthly monitoring. "The primary outcome is maintenance of vision," added Dr. Chang. "In the first year of treatment, we saw rapid improvement in vision and then stabilization. In all groups, vision was maintained in more than 90% of patients; primary outcome was reached."

Also, Dr. Chang mentioned most clinicians' apprehension when anti-VEGFs were just starting to be used in clinical practice. "There was a lot of concern that there may be cardiovascular or cerebrovascular hypertension issues. But over decades of using these types of drugs, we have not seen this issue," he shared. "The VIEW studies did not show any significant safety signals in any of these two drugs [aflibercept and ranibizumab]," he added.

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Dr. Andrew Chang, Associate Clinical Professor, University of Sydney

But what can be drawn from the VIEW studies, clarified Dr. Chang, is that the data support the use of aflibercept in a bi-monthly basis, hence reducing the burden of patient visits and injections during the first year of treatment.

"Then in the second year, it may be possible to extend patients beyond a bi-monthly treatment (perhaps to quarterly), but this is based on individual vision and anatomic criteria. The philosophy of treatment therefore arises as: do we want to treat these patients proactively or reactively?," said Dr Chang.

Based on the 96-week results of the VIEW studies, aflibercept and ranibizumab were equally effective in improving best corrected visual acuity (BCVA) and preventing BCVA loss at 96 weeks.[5] These findings demonstrate the efficacy and safety of aflibercept in AMD patients during a second year of variable dosing after a first-year fixed-dosing period.

Does anti-VEGF injection work all the time?

"It works most of the time but not in everyone," emphasized Dr. Chang. "No one size fits all; 20-30% of patients in reported studies have sub-optimal response to treatments," he said.

In treating patients then, what data do we use in selecting treatment? Published studies can be used as a guide or other studies can be explored, emphasized Dr. Chang, especially for specific patient subgroups.

"Based on my experience and these clinical trial data, intravitreal aflibercept does improve vision and anatomy," he concluded.

References:

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