inSight

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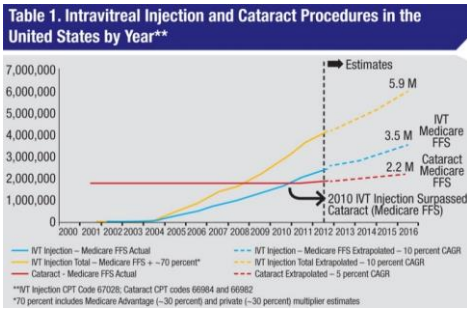
# Intravitreal Injections

Intravitreal injections have been a part of ophthalmic practice for many years. Although injections were rarely performed 30 years ago, retinal specialists became familiar with them during the initial phases of the AIDS crisis in the late 1990s. At that time, AIDS patients came to our clinics for weekly injections of ganciclovir and foscarnet to treat CVM retinitis. Fortunately, the advent of HAART therapy (highly active anti retroviral therapy) greatly reduced the necessity of intravitreal injections.

The development of Ranibizumab (Lucentis ) in 2003 and the adoption of Bevicizumab (Avastin) in 2006 initiated a new era of intravitreal injections. The efficacy of these drugs, along with the later introduction of Aflibercept (Eyelea) became rapidly evident to the ophthalmic community. The use of intravitreal steroids has also become quite common. Between 2009 and 2001, the number of intravitreal injections exceeded the number of cataract surgeries, and the number continues to climb, with over 6 million injections being performed by 2016 (Figure 1)




While intravitreal injections were initially used to treat macular degeneration, diabetic retinopathy and retinal vein obstruction are now also common indications for this procedure. Over the last several years, different lessons have been learned about this procedure and the techniques now in use to minimize any potential complications. Many years ago, task forces developed guidelines for intravitreal injections, but many of these guidelines have proven obsolete.

The most significant complication of intravitreal injections is intraocular infection, or endophthalmitis. Several studies have been performed to determine the causes of endophthalmitis, and measures that should be used to prevent it. Several years ago, Doug Sigford MD performed a meta-analysis of the ophthalmic literature and determined that the average rate of endophthalmitis was 1 in 2,000 injections. More recent studies indicate that the rate of endophthalmitis has dropped to about 1 in 5,000 injections. As the number of successive injections performed increases, so does the cumulative rate of endophthalmitis, but after 40 injections, the cumulative risk is still only 1 in 300. However, chance has no memory, and the risk does not increase with each successive injection.

We perform our injections in our several offices. Although some institutions and practices have a separate injection clinic for their patients, we typically perform injections at the time of the patients' office visit, and have not found this to be inconvenient. We initially used topical antibiotics at the time of injection, but the Diabetic Retinopathy Clinical Research Network found similar rates of endophthalmitis in 2 cohorts with and without topical antibiotics, so they are no longer recommended. I hope to provide more insights into intravitreal injections in a subsequent issue.

**By: *Charles C. Barr, MD***

*To schedule an appointment at the Kentucky Lions Eye Center, please call 502-588-0588.*

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