



# Provincial Retinal Diseases Treatment Program

## *Analysis of Glaucoma Surgery Rates in PRDTP Patients*

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The following is a brief summary of the results of each of the phases of study completed. More details on the Quality Reviews can be found on the PRDTP website.

### PRDTP- Phase 1 Quality Review

Results of Phase 1 of the quality review, which linked data from the PRDTP database and the PHSA Surgical Patient Registry (SPR) for Glaucoma surgery are as follows: The preliminary data had indicated the overall rate of PRDTP patients requiring glaucoma surgery, in the four years (2014-2017), is 1% across RVO, DME, and AMD.

### PRDTP- Phase 2 Quality Review

Phase 2 analysis included all patients receiving first intravitreal injection of Avastin, Lucentis, or Eylea for an indication of wet AMD, DME, or RVO, between January 1, 2011 and December 31, 2015. Compared to the Phase 1 analysis, which included only the procedures conducted in operating rooms, comprehensive data was used including glaucoma procedures conducted in operating rooms, procedure rooms, and physician offices. The phase 2 analysis was performed on linked data from the PRDTP database with Ministry of Health Datasets, specifically the Medical Services Plan Billing Data (MSP) and PharmaNet. The Phase 2 data analysis indicated a 2-year glaucoma procedure rate of 2.1% in PRDTP patients. Higher risk was associated with RVO, male sex, patients with prior glaucoma, but not age. Risk increased with the number of injections received. There was no increased risk related to which pharmacy supplied drug. As well, there did not appear to be a link between which drug was used for treatment and glaucoma surgery.

### PRDTP- Phase 3 Quality Review

Phase 3 quality review looked at the 2-year glaucoma surgery rate for wet AMD patients (2011 to 2015), with the first intravitreal injection of Avastin, Lucentis or Eylea. Patients with previous history of glaucoma were excluded. The first glaucoma operating room surgery within 2 years was determined by intersection of PRDTP, SPR and MSP records. The Phase 3 data analysis indicated that the two year glaucoma surgery rate was 0.5% over the years of 2011 to 2015. The results also found that higher number of injections per year was associated with an increased risk of 2-year glaucoma surgery rate. For the 11% of patients receiving 10-13 injections per year, the 2-year rate was 2.4%. No increasing trend for glaucoma surgery was noted between 2011 and 2017.

### PRDTP- Phase 4 of the Quality Review

A fourth Quality Review was carried out to better understand the concern of glaucoma associated with anti-VEGF treatments and address any modifiable risk factors. This review represents the most comprehensive analysis to date, studying 41,000 BC patients over a 10-year time frame, and assessing glaucoma-related outcomes of the patient population. Overall the results confirm that the benefits of treatment outweigh any potential risks. The two-year incidence rate of glaucoma surgery was <1%. Certain patient related factors were found to be linked to higher rates of glaucoma outcomes (such as male sex, age less than 75, and certain pre-existing conditions), along with higher rates of injections per patient. Factors such as drug and pharmacy provider were not found to increase risk.

### PRDTP- Ongoing Quality Monitoring and Analyses

The program continues quality-related work and completed other quality analyses during fiscal year 2020-21, which suggested decreased frequency of glaucoma-related outcomes. The PRDTP will continue quality monitoring and improvement.