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**Temporal Trends in the Treatment of Proliferative Diabetic Retinopathy: An AAO IRIS Registry Analysis**

Dan Gong, MD  
Boston, MA

Nathan Hall, MS, Tobias Elze, PhD, Lucia Sobrin, MD, Joan W. Miller, MD, Alice Lorch, MD, MPH, John Brown Miller, MD

**Purpose:**

Proliferative diabetic retinopathy (PDR) is a leading cause of irreversible vision loss in the United States, and panretinal photocoagulation (PRP) and intravitreal anti-vascular endothelial growth factor injections (IVI) are both acceptable treatments to reduce the risk of vision loss in PDR patients. This study examined how treatment patterns for PDR have changed over time using real-world data from the AAO IRIS Registry (Intelligent Research in Sight).

**Methods:**

A retrospective, cohort analysis using the IRIS Registry database spanning 2013-2017. A total of 141,317 patients with newly diagnosed PDR (ICD-10 codes E08.35, E09.35, E10.35, E11.35, E13.35; ICD-9 code 362.02) were included. Patient characteristics including age, gender, and laterality; whether patients received IVI only, PRP only, both IVI and PRP (IVI+PRP), or observation; intravitreal drug data; and diabetic macular edema (DME) status were collected. Comparison analyses were conducted using Tukey and Chi-squared tests.

**Results:**

From 2013-2017, the average age of PDR diagnosis was 59.2 with 53.3% of patients being male. 62,105 (43.9%) PDR patients received IVI, 32,293 (22.7%) PRP, 27,664 (19.6%) IVI+PRP, and 13,255 (9.4%) observation. PDR patients receiving IVI were older (60.3) than patients receiving IVI+PRP (57.4) and PRP (58.4) (p<0.001). Men were more likely than women to receive IVI+PRP (22.5% vs 20.6%, p<0.001) and less likely to receive PRP only (29.1% vs 34.8%, p<0.001). In 2013, more PDR patients undergoing treatment received PRP (47.5%) followed by IVI (37.3%) and IVI+PRP (24.7%); by 2017, the majority of patients received IVI (52.9%) followed by IVI+PRP (24.7%) and PRP (22.3%) (p<0.001). PDR patients with DME were more likely than patients without DME to receive IVI only (64.3% vs 31.5%, p<0.001), but the proportion of patients receiving IVI only increased in both groups from 2013 to 2017 (25.0% to 65.7% for DME patients, p<0.001; 21.1% to 32.9% for non-DME patients, p<0.001). Among IVI and IVI+PRP patients, bevacizumab (69.8%) was the most common intravitreal medication given followed by aflibercept (18.4%) then ranibizumab (11.7%).

**Conclusions:**

In this cohort analysis of the IRIS Registry, IVI surpassed PRP as the more common method of treating PDR from 2013 to 2017 with bevacizumab administered in more than two-thirds of intravitreal injections.