

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

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Financial Disclosures

- None

Summary

- In this cohort analysis of the AAO IRIS[®] Registry, intravitreal injection with anti-VEGF therapy surpassed panretinal photocoagulation as the more common method of treating proliferative diabetic retinopathy from 2013 to 2017.
- The most common anti-VEGF medication administered was bevacizumab, accounting for over two-thirds of intravitreal injections.

Background

- 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.

Paradigm Shift

Clinical Trial > [Ophthalmology](#). 1991 May;98(5 Suppl):766-85.

**Early Photocoagulation for Diabetic Retinopathy.
ETDRS Report Number 9. Early Treatment Diabetic
Retinopathy Study Research Group**



Randomized Controlled Trial > [JAMA](#). 2015 Nov 24;314(20):2137-2146.
doi: 10.1001/jama.2015.15217.

**Panretinal Photocoagulation vs Intravitreous
Ranibizumab for Proliferative Diabetic Retinopathy:
A Randomized Clinical Trial**

Randomized Controlled Trial > [JAMA Ophthalmol](#). 2018 Oct 1;136(10):1138-1148.
doi: 10.1001/jamaophthalmol.2018.3255.

**Five-Year Outcomes of Panretinal Photocoagulation
vs Intravitreous Ranibizumab for Proliferative
Diabetic Retinopathy: A Randomized Clinical Trial**

Purpose

- 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).

IRIS Registry

IRIS Registry by the numbers*



*As of April 1, 2020

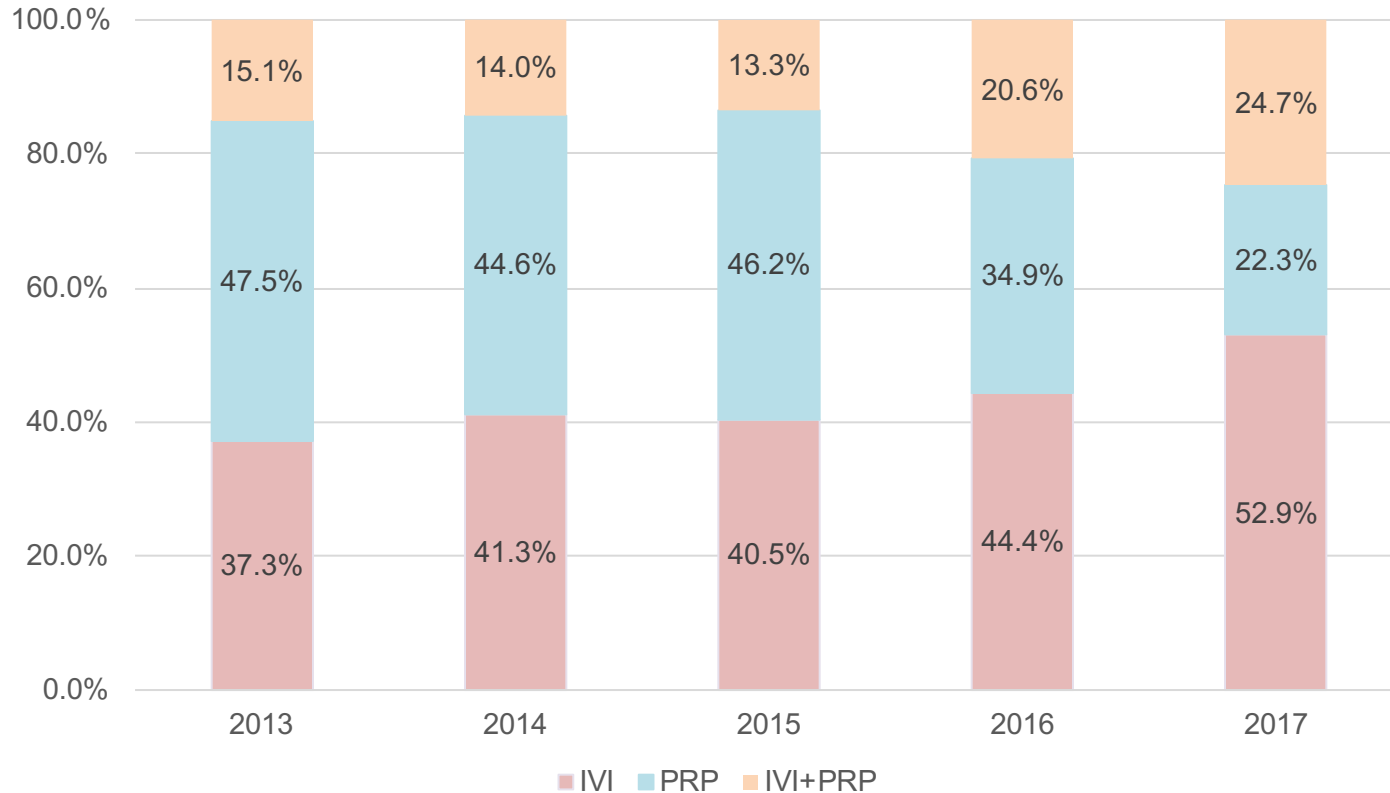
Methods

- 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.

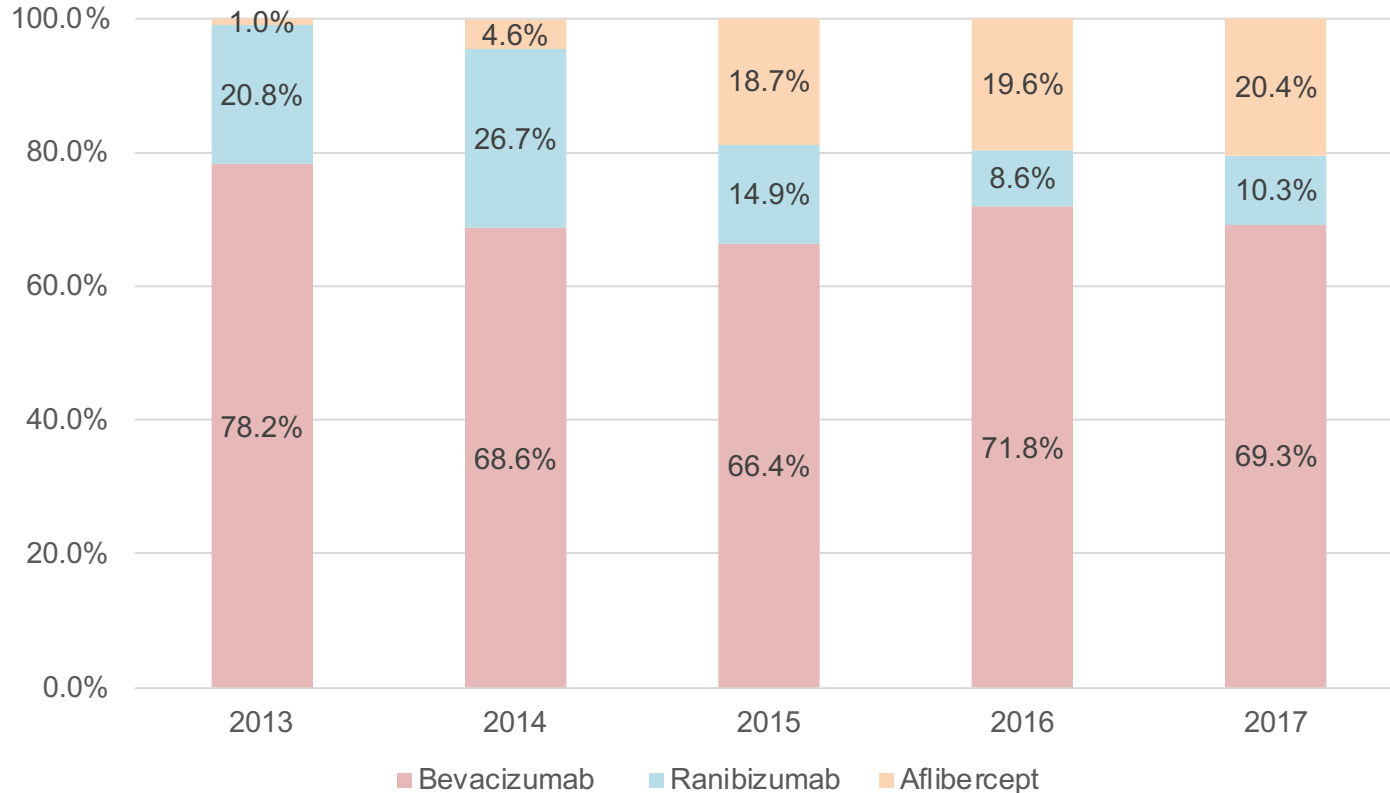
Patient Demographics

Baseline Demographics	Aggregate PDR Cohort
Mean Age (SD)	59.2 (12.1)
Gender	
Male (%)	75,192 (53.3%)
Female (%)	65,837 (46.7%)
Unspecified (%)	288 (0.2%)
Laterality	
Right	29,050 (20.6%)
Left	31,271 (22.1%)
Bilateral	34,931 (24.7%)
Unspecified	46,065 (32.6%)
DME status	
With DME	48,463 (34.3%)
Without DME	24,629 (17.4%)
Unspecified DME status	68,225 (48.3%)

Treatment Modality by Year



Anti-VEGF Medication Use by Year



Limitations

- Our analysis did not include clinical outcomes such as visual acuity in relation to treatment, imaging data to document the severity and change in DME in response to treatment, and detailed exam information including the severity of PDR or presence of high-risk characteristics warranting treatment versus observation.
- Diagnoses and treatment data were based solely on ICD and CPT codes, respectively, which are not confirmed using other sources of information and were subject to the accuracy of patient record documentation and data reporting.
- Our data did not include non-clinical information such as socioeconomic factors which may contribute to one treatment modality being used over another. Prior research has shown that IVI is more costly and requires more frequent treatment compared to PRP which may influence physician treatment decisions.

Conclusion

- In this cohort analysis of the AAO 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.

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