

Anti-Vascular Endothelial Growth Factor Agents and Pan-retinal Photocoagulation for Proliferative Diabetic Retinopathy:

An Analysis Pre and Post DRCR Protocol S

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Disclosures

- DE's financial disclosures include ad hoc consulting for Alcon, Alimera, Allergan, Dutch Ophthalmic, Glaukos, Regenxbio
- DE is also a stockholder for Aldeyra Therapeutics and Pykus Therapeutics.

Summary

Research

Original Investigation

Panretinal Photocoagulation vs Intravitreal Ranibizumab for Proliferative Diabetic Retinopathy A Randomized Clinical Trial

Writing Committee for the Diabetic Retinopathy Clinical Research Network

Using an interrupted time series regression, we found that PRP rates for PDR declined significantly and anti-VEGF rates significantly increased after publication of Protocol S and was largely driven by increases in bevacizumab use.

Objective:

DRCR
Protocol S:
PRP and
Anti-VEGF
Effective to
Treat PDR

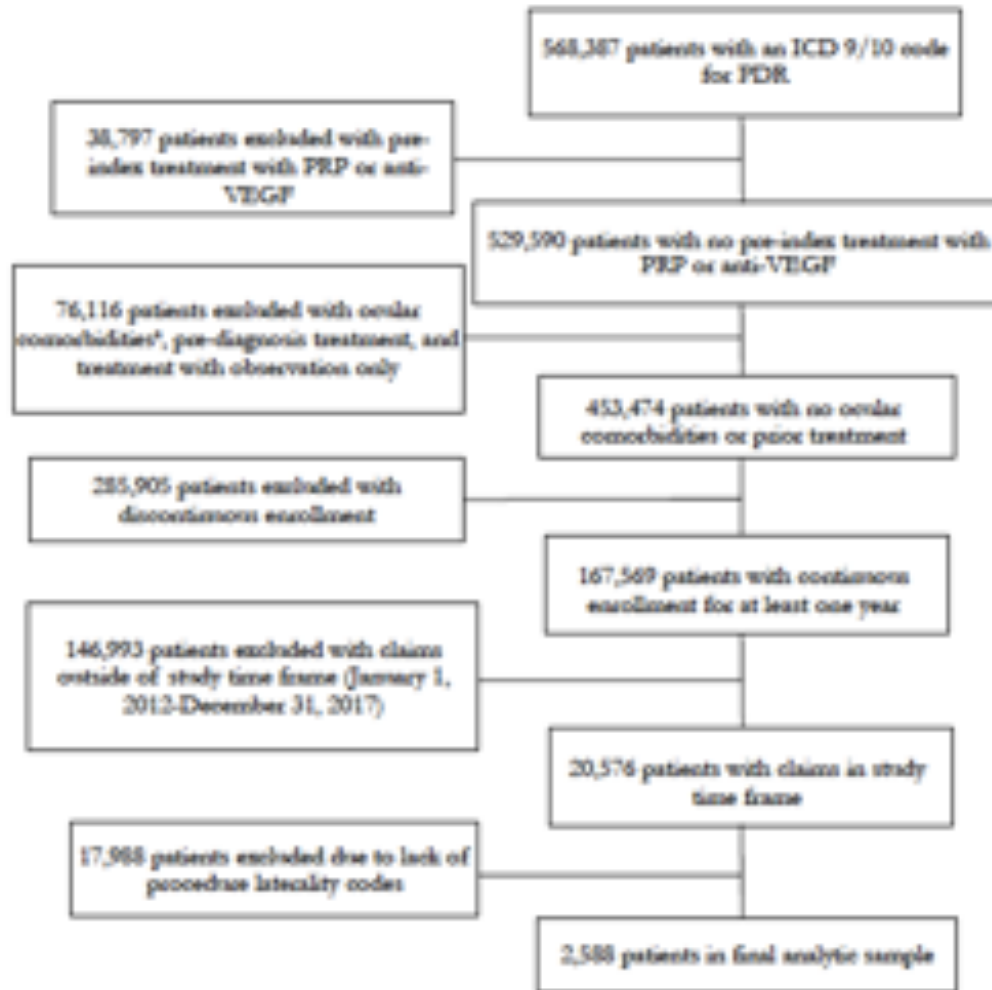
How Have
Rates
Changed?



Key Points:

Only eyes with known laterality included

Optum Labs:
Nationally Representative Database

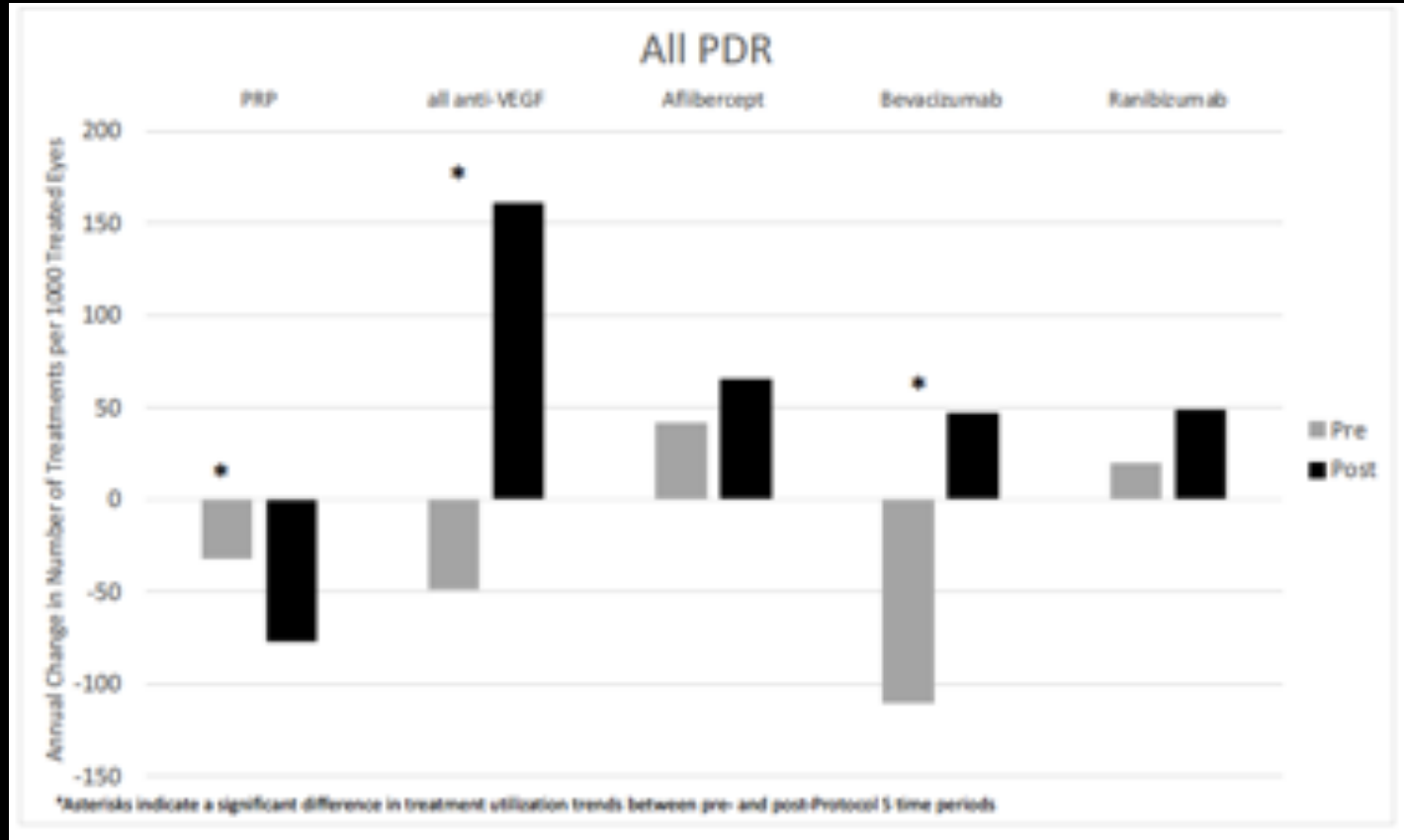


*retinal vein occlusion, neovascular glaucoma, vitreous hemorrhage, traction retinal detachment, neovascular age-related macular degeneration, retinal neovascularization, iris neovascularization, retinal ischemia, posterior uveitis, uveitis, NCG, intermediate uveitis, anterior uveitis, retinal vasculitis, and other retinal vascular disorders.

Key Points:

Following Protocol S

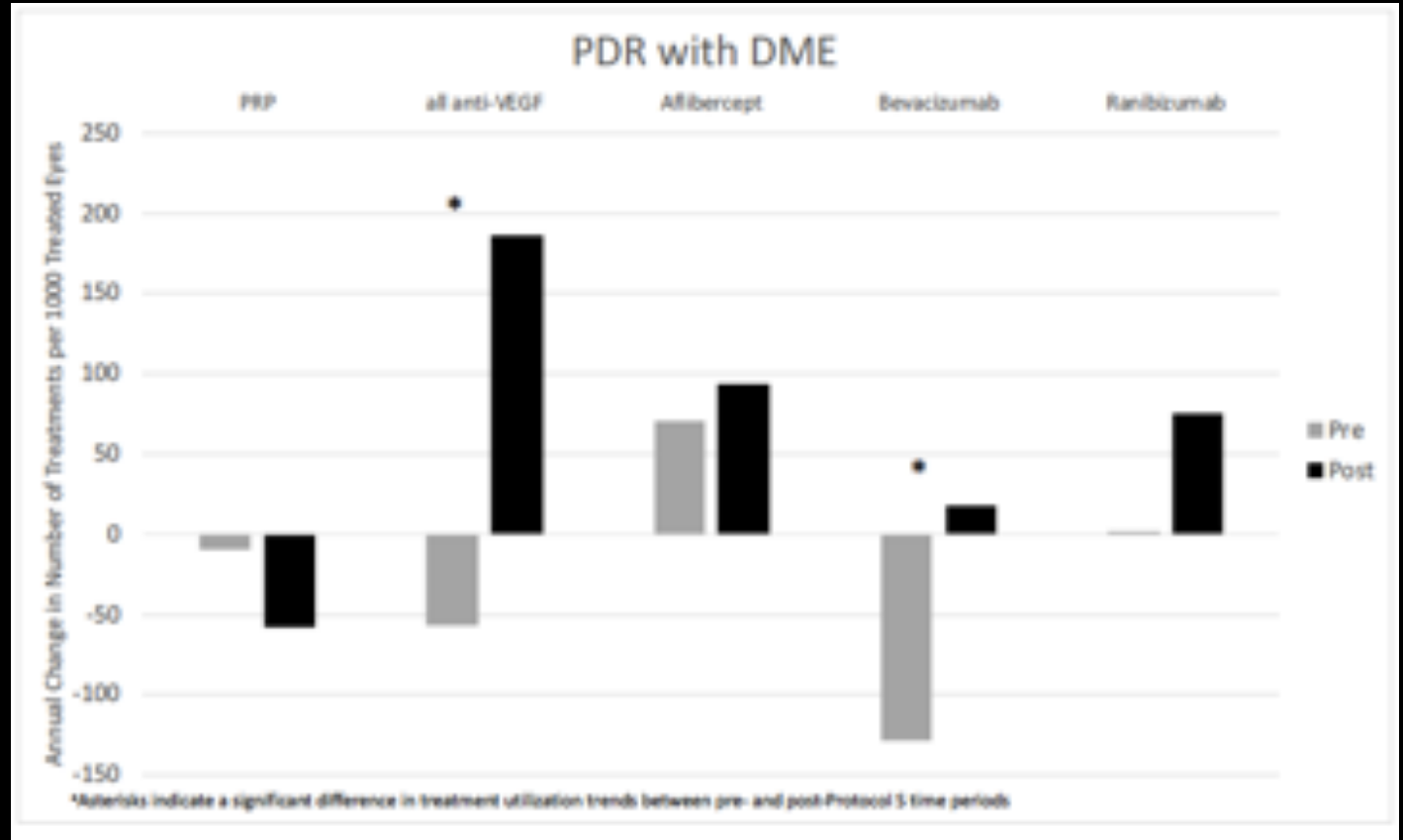
1. PRP Rates decreased
2. Anti-VEGF increased
3. Avastin Driven



Key Points:

Following Protocol S

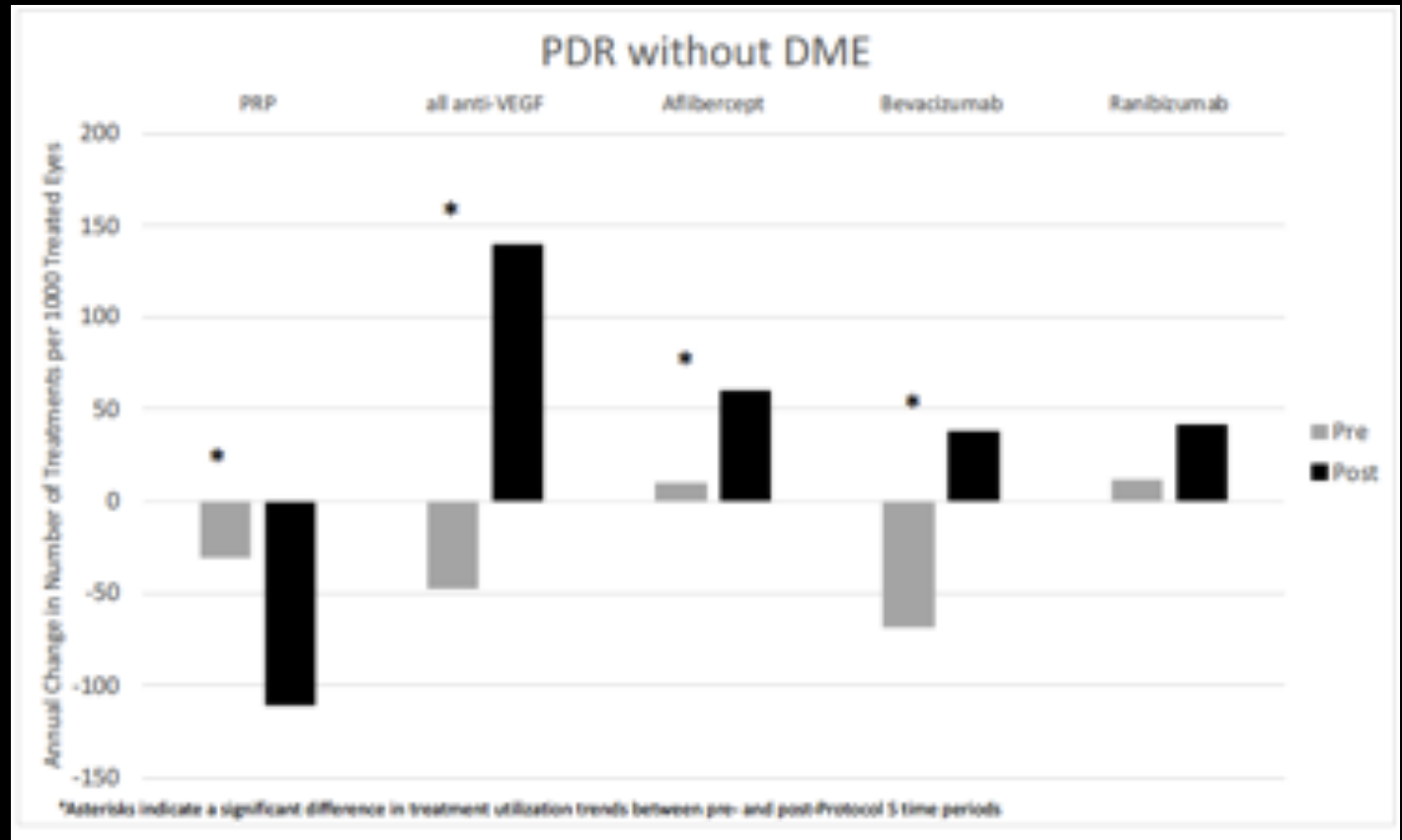
1. PRP Rates stable
2. Anti-VEGF increased
3. Avastin Driven



Key Points

Following Protocol S

1. PRP Rates decreased
2. Anti-VEGF increased
3. Avastin and Aflibercept Driven



Key Points: Following Protocol S

1. PRP
Rates
highest in
PDR w/o
DME

2. Anti-
VEGF use
increased
In PDR w/o
DME

⊕

Treatment utilization among PDR eyes (treatment/1000 eyes)												
	2012	2013	2014	2015	2016	2017	2018	2019	Average Rate	Pre-Protocol S trend	Post-Protocol S trend	p-value for Pre vs. Post comparison
All PDR												
PRP	784	677	731	746	805	780	706	566	724	-32	-77	0.005
all anti-VEGF	876	1,242	969	888	1,095	1,367	1,494	1,583	1189	-48	161	0.001
<i>Aflibercept</i>	10	8	42	216	291	471	433	515	268	41	66	0.460
<i>Ranibizumab</i>	787	739	652	513	662	778	819	800	719	-110	47	<0.001
<i>Roxibizumab</i>	79	494	274	157	142	117	247	267	221	20	48	0.680
PDR with DME												
PRP	474	400	444	515	559	594	453	363	477	-9	-58	0.091
all anti-VEGF	1,533	2,011	1,686	1,386	1,477	1,774	1,885	2,096	1731	-57	187	0.043
<i>Aflibercept</i>	22	11	89	356	434	629	599	689	353	70	93	0.682
<i>Ranibizumab</i>	1,407	1,744	1,566	784	832	942	929	1,003	1028	-128	18	0.010
<i>Roxibizumab</i>	104	856	432	246	212	183	363	404	350	1	75	0.640
PDR without DME												
PRP	1017	938	958	977	1028	928	890	707	930	-31	-111	<0.001
all anti-VEGF	383	521	402	390	750	1,042	1,199	1,226	739	-48	140	<0.001
<i>Aflibercept</i>	0	3	3	76	162	343	313	394	163	10	60	0.002
<i>Ranibizumab</i>	322	339	248	246	509	633	737	639	464	-69	38	<0.001
<i>Roxibizumab</i>	61	156	150	68	79	64	149	172	112	11	42	0.130

95% CI results adjusted for change in number of patients treated over time

PDR = Proliferative diabetic retinopathy, DME = diabetic macular edema, VEGF = vascular endothelial growth factor, PRP = panretinal photocoagulation

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THANK YOU

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