Disease Activity and Anti-VEGF Treatment Patterns in a Commercially Insured US Patient Population With Neovascular Age-Related Macular Degeneration

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Disclosures

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- Consulting fee: Allergan, an AbbVie company
- Speakers Bureau: Allergan, an AbbVie company

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- Employee: Neosis Healthcare Technologies
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- Employees: IQVIA, formerly QuintilesIMS

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- Employees: AbbVie Inc.

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Summary

Key Findings

- Among n=570 eyes presenting with active choroidal neovascularization (aCNV), 19.8% (n=113) transitioned to inactive CNV (iCNV) with a median transition time of 6.6 months
- Patients with aCNV incurred at least $7,000 higher all-cause annual costs than patients with iCNV, largely driven by higher outpatient/anti-VEGF costs

Conclusions

- Rates of anti-VEGF treatment in this population were low compared with clinical trials, which may have contributed to limited transition to inactive/quiescent status
- Suboptimal treatment may lead to worse clinical outcomes (eg, worse visual acuity) and higher downstream costs
- Long-acting anti-VEGF therapy may help reduce treatment burden and preserve visual acuity

Limitation

- A key study limitation was the potential for miscoding in the claims date, which may have contributed to findings or lack of documentation of transitions of care

Background

- Neovascular age-related macular degeneration (nAMD) accounts for ≤20% of AMD cases, but is responsible for ~90% of all cases of severe vision loss from the disease[1,2]
- Available anti-VEGF therapies require frequent monitoring and regular intravitreal injections for optimal outcomes, resulting in a high patient, caregiver and healthcare system burden[3,4]
- nAMD treatment patterns and transitions in disease status are not well understood in commercially insured US patients

Objective

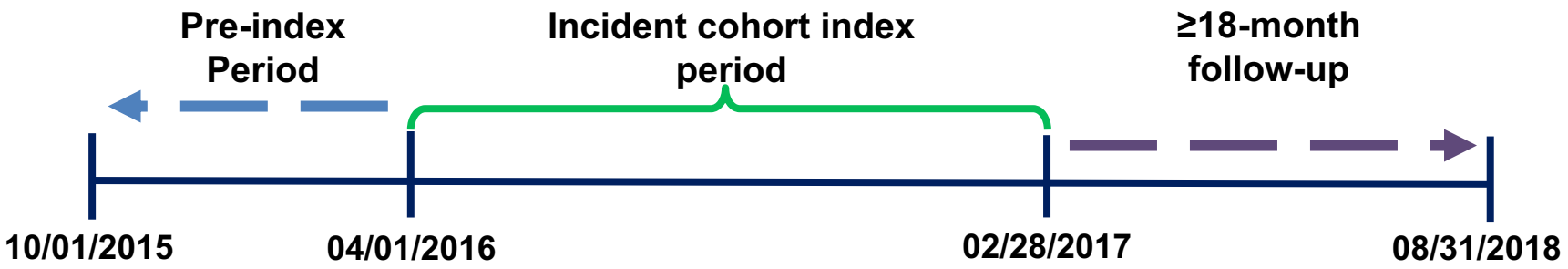
- To assess choroidal neovascularization (CNV) activity and anti-VEGF treatment patterns among incident patients with nAMD in US clinical practice

1. Kahn HA, et al. *Am J Epidemiol*. 1977;106:17–32. 2. Ferris FL, et al. *Arch Ophthalmol*. 1984;102:1640–1642. 3. Schmidt-Erfurth U, et al. *Br J Ophthalmol*. 2014;98:1144-67. 4. Prenner JL, et al. *Am J Ophthalmol*. 2015;160:725-31.e1.

Study Design

- Retrospective analysis of administrative claims data from IQVIA's PharMetrics® Plus database
  - Incident cohort: ≥50 years of age with commercial insurance, ≥1 claim(s) of ICD-10-CM nAMD diagnosis in the index period (per the figure), and ≥18 months of follow-up
    - Patients were stratified by disease status at diagnosis based on ICD-10-CM codes; ie, active CNV (aCNV), inactive/quiescent CNV (iCNV), inactive scar, and unspecified

Study period: Oct 1, 2015 – Aug 31, 2018
Index period: Apr 1, 2016 – Feb 28, 2017



Pre-index 6-month
- Baseline characteristics
- Comorbidities
- Prior treatments/ procedures of interest
- Prior nAMD diagnosis

Index date
- Date of the first nAMD diagnosis claim during the study period

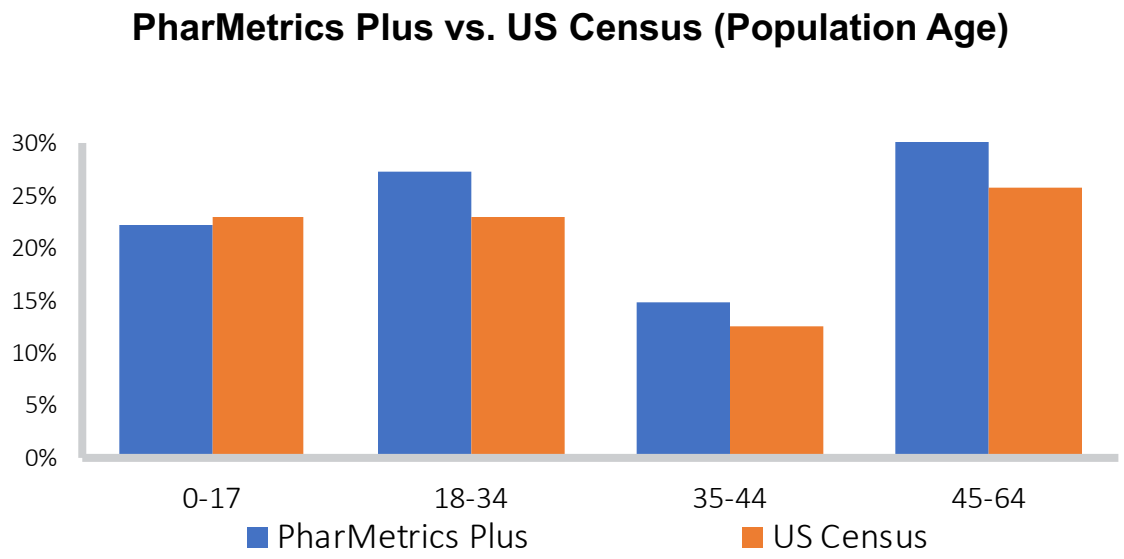
Follow-up
- CNV transitions of interest
- Annualized healthcare resource utilization
  - nAMD-related outpatient visits
- Anti-VEGF treatment patterns
- All patients and by severity

Outcome Measures

- Kaplan-Meier analyses were used to measure the time to first transition of disease status
  - From aCNV to iCNV
  - From iCNV to aCNV
  - From iCNV to inactive scar
- Mean annual healthcare resource utilization (HRU) is reported per patient
- Anti-VEGF treatment patterns were analyzed in the subgroup of patients who received ≥1 anti-VEGF treatment and had ≥12 months of follow-up after the initial treatment

PharMetrics® Plus Database

- One of the largest claims databases in the US with >150 million unique enrollees across all 50 states
- Representative of the national, commercially insured population in age and gender for people aged ≤65 years



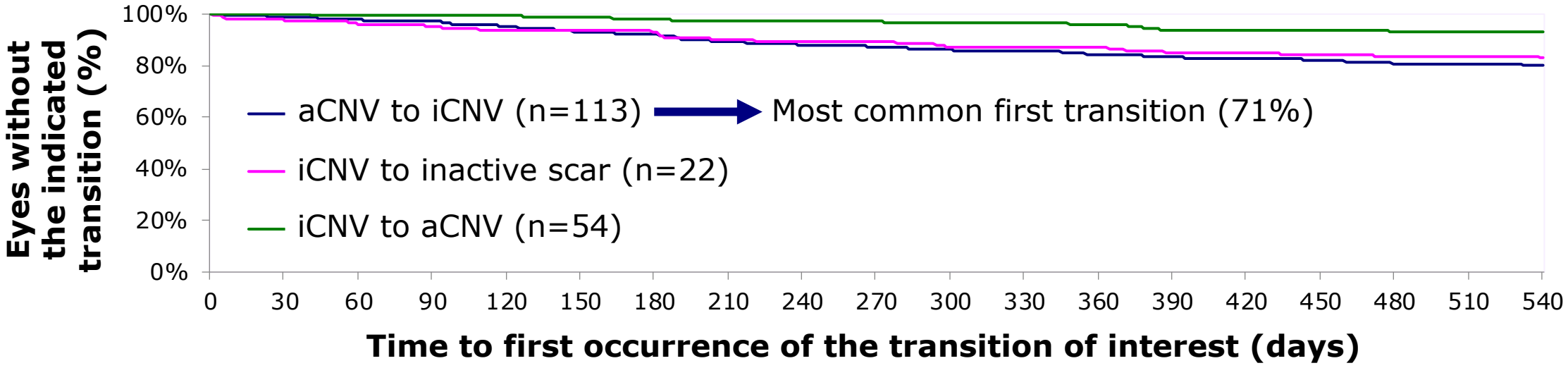
Results

Of 1081 Incident nAMD Patients, Most had aCNV at Baseline and Few had Received Prior anti-VEGF Therapy

Parameter	aCNV n=501 (46.3%)	iCNV n=251 (23.2%)	Inactive scar n=124 (11.5%)	Unspecified n=205 (19.0%)
Mean (SD) age, y	67.3 (9.8)	66.8 (10.2)	70.7 (11.3)	67.2 (10.9)
Female, n (%)	280 (55.9)	145 (57.8)	62 (50.0)	111 (54.1)
Prior anti-VEGF use,[a] n (%)	13 (2.6)	1 (0.4)	0	8 (3.9)
Bevacizumab	0	0	0	0
Ranibizumab	4 (0.8)	0	0	3 (1.5)
Aflibercept	10 (2.0)	1 (0.4)	0	6 (2.9)
Prior fall/fracture, n (%)[b]	21 (4.2)	15 (6.0)	10 (8.1)	6 (2.9)
Mean (SD) CCI score	1.1 (1.5)	1.1 (1.8)	1.3 (1.7)	1.3 (1.6)
Ocular comorbidities, n (%)				
DR	29 (5.8)	7 (2.8)	6 (4.8)	14 (6.8)
OAG/OHT	28 (5.6)	19 (7.6)	14 (11.3)	15 (7.3)
OSD	55 (11.0)	11 (4.4)	7 (5.6)	13 (6.3)
Uveitis	9 (1.8)	2 (0.8)	1 (0.8)	0

[a] Not mutually exclusive. [b] During the 6-month pre-index period
CCI, Charlson Comorbidity Index; DR, diabetic retinopathy; OAG, open-angle glaucoma; OHT, ocular hypertension; OSD, ocular surface disease

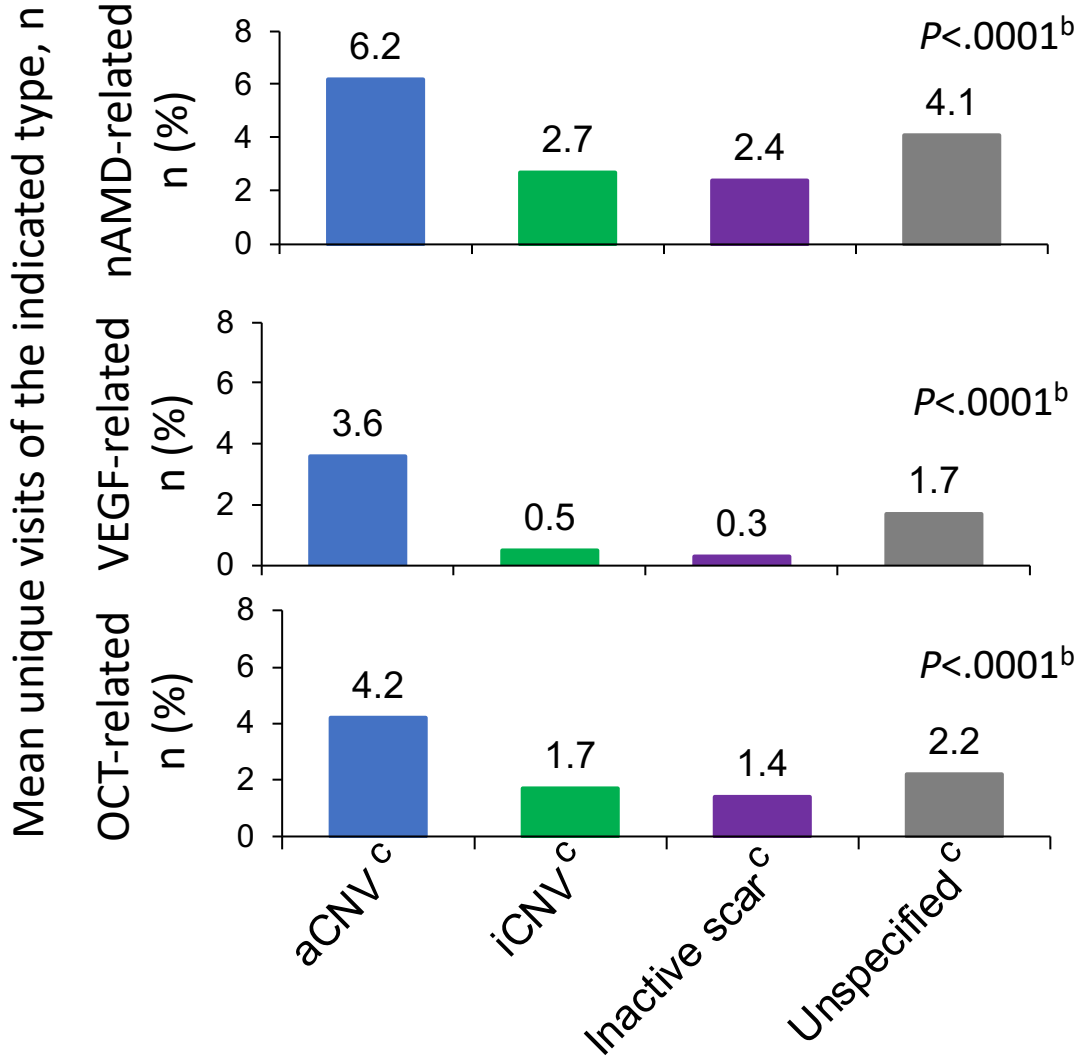
Most aCNV Eyes Remained Without a Transition Through 18 Months



- The most common baseline status was aCNV (45%, N=570) of 1270 incident eyes diagnosed with nAMD at baseline
- Among eyes with active CNV at baseline, only 28% (n=160) had any transition and only 20% transitioned to inactive CNV (n=113), the most common first transition
- The median time in eyes transitioning from active to inactive CNV was ~6.6 months (mean time of ~7.6 months)

Results

Annual nAMD-Related Healthcare Resource Utilization and Costs Were Significantly Higher in Patients With aCNV Than Those With iCNV or Inactive Scar[a]



Direct Costs (per patient)*	Active CNV (n= 501) Annual Cost, Mean (SD)	Inactive CNV (n=251) Annual Cost, Mean (SD)
Total annual All-cause cost	$21, 352 ($33,040)	$14,030 ($22,399)
All-cause Outpatient cost	$13,103 ($15,428)	$7,241 ($11,106)
• nAMD related outpatient • Anti-VEGF related outpatient • OCT -related outpatient costs	• $5,287 ($8,028) • $3,894 ($6,870) • $247 ($ 252)	• $985 ($2,613) • $471 ($2,261) • $96 ($103)
All-cause Pharmacy cost	$ 3,611 ($7,917)	$2,787 ($4,563)
All-cause Hospitalization costs	$4,087 ($22,729)	$3,701 ($14,960)
All-cause ER costs	$552 ($2,114)	$301 ($958)

Patients with active choroidal neovascularization (CNV) incurred at least $7,000 higher all-cause annual costs than patients with inactive CNV, largely driven by higher outpatient/anti-VEGF costs

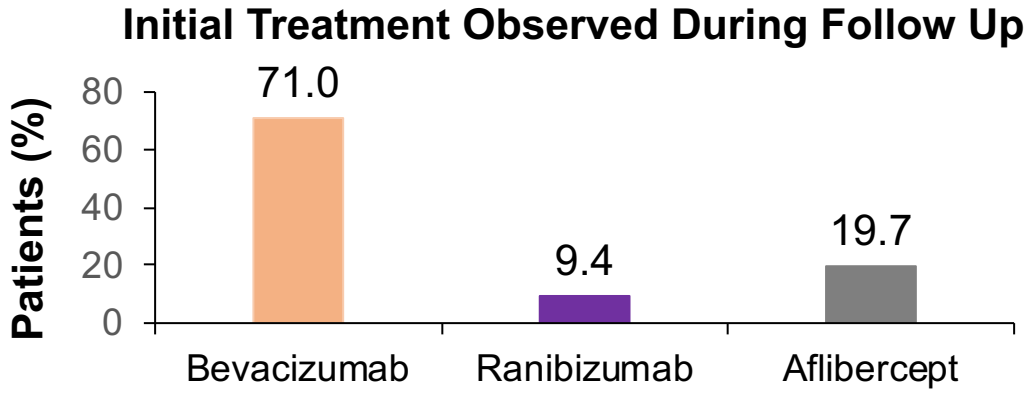
[a] Data reported per patient. [b] Across severity subgroups. Statistical analysis included the "Unspecified" disease subgroup. [c] Total, N=1081 (100%); aCNV, 501 (46.3%); iCNV, n=251 (23.2%); Inactive scar, n=124 (11.5%); Unspecified, n=205 (19.0%). OCT, optical coherence tomography.

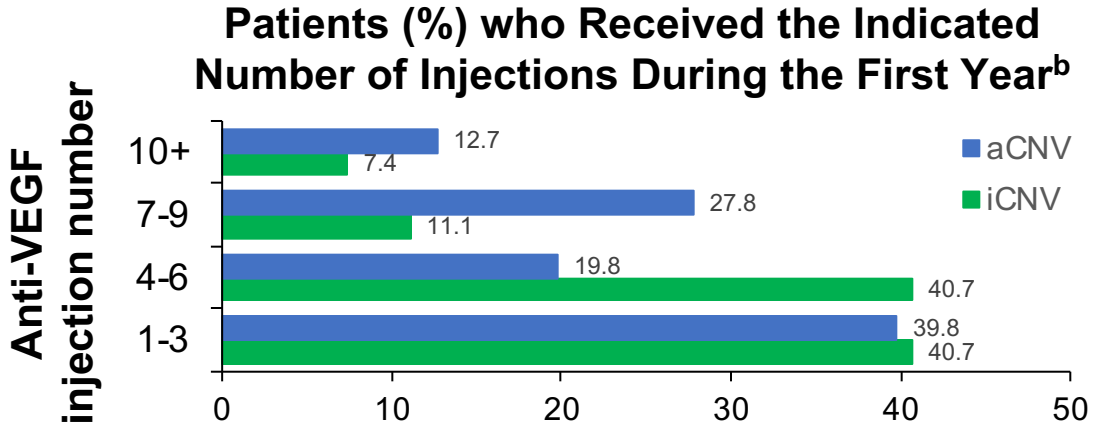
Anti-VEGF Treatment Patterns

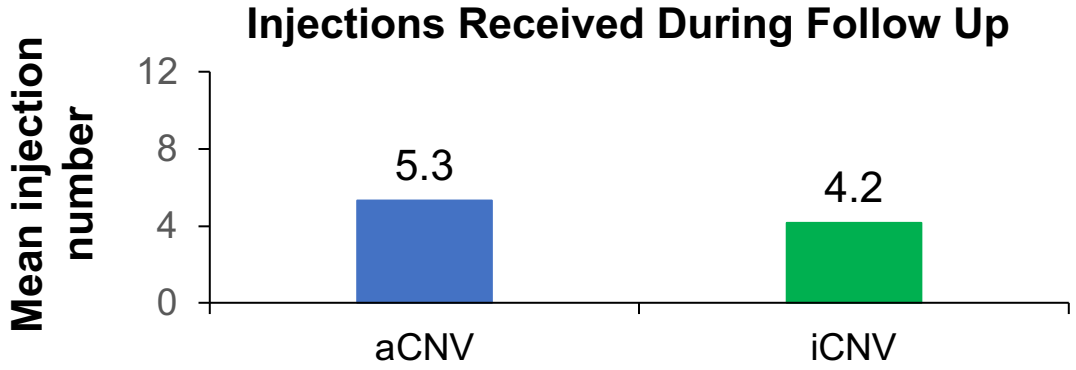
- 427 incident patients receiving anti-VEGF treatment were included in this subgroup analysis[a]

- ~41% of patients received 1-3 anti-VEGF treatments during follow up
  - Overall, ~62% of patients received ≤6 injections over the first year

- The overall mean (SD) number of injections during one year of follow up was 5.2 (3.5)



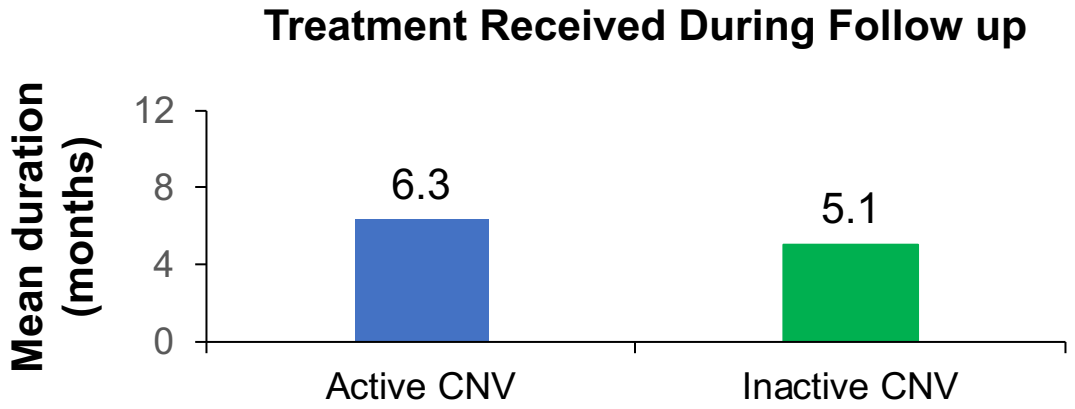




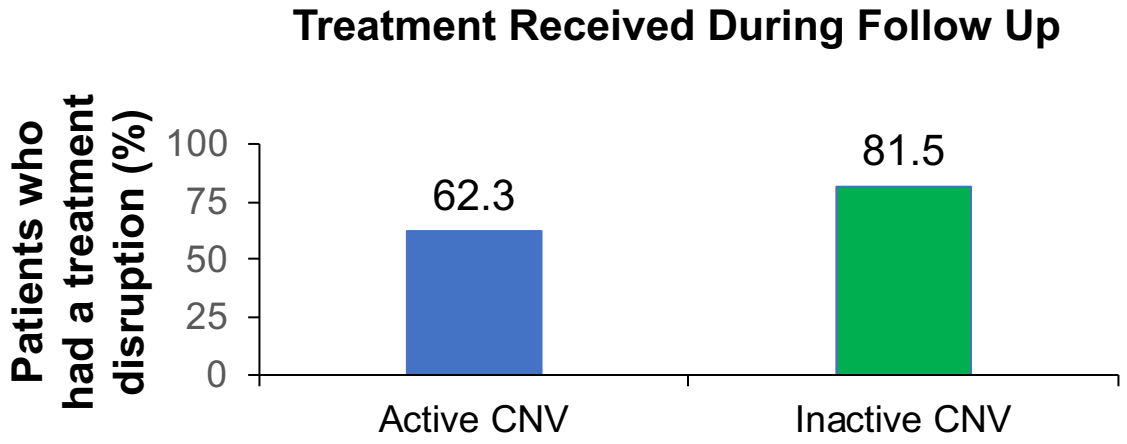
[a] Patients treated with only 1 anti-VEGF type on initial injection date and during 12-months post-initial injection. [b] Including initial injection

Anti-VEGF Treatment Patterns Analysis (continued)

- Overall, the mean (SD) duration of therapy was 6.2 (4.7) months[a]



- Overall, 282 (66.0%) patients reported a treatment disruption/ break[b]



[a] Time from diagnosis to the last recorded anti-VEGF injection.
[b] Defined as a >18-week gap in any anti-VEGF therapy.

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Thank You!