CO35

Real-World Effectiveness of Intravitreal Ranibizumab and Aflibercept for Eyes with Central Retinal Vein Occlusion: A Multi-Institutional Cohort Study in Taiwan

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Background

- Central retinal vein occlusion (CRVO) is an important cause of visual loss among adults.
- CRVO is caused by primary formation of a thrombus consisting of fibrin and platelets in the central retinal vein.
- Ranibizumab and aflibercept, designed to target vascular endothelial growth factor (VEGF), were approved by Taiwan Food and Drug Administration (TFDA) and have become the mainstream therapy for CRVO in Taiwan.

Objectives

- The long-term effectiveness of changes in central retinal thickness (CRT) and visual acuity (VA) post ranibizumab and aflibercept therapy remains unclear in Taiwan.
- To evaluate the real-world effectiveness of intravitreal ranibizumab and aflibercept for eyes with CRVO in Taiwan.

Methods

- **Study design:** A retrospective cohort study
- **Database:** The Chang Gung Research Database (CGRD) in Taiwan
- **Study Population:** CRVO outpatients coming to Chang Gung Memorial Hospital in northern Taiwan
- **Exposure:** Newly initiating ranibizumab or aflibercept therapy from January 2017 to December 2019
- **Proposed sample size:** 70 in each group
- **Data collection:** At baseline, and follow up in 1-year and 2-year
- **Outcomes:**
  - ✓ Central retinal thickness (CRT)
  - ✓ Visual acuity (VA) measured by Snellen charts
- **Statistics:**
  - ✓ VA was converted to the logarithm of the minimum angle of resolution (LogMAR) VA.
  - ✓ Mixed model analysis was used to assess CRT and LogMAR VA changes between the baseline and different time points.

Results

Table 1. Baseline Characteristics

Characteristic	ranibizumab (n=73)	aflibercept (n=61)
Age, mean (SD)	65.0 (15.0)	66.4 (14.1)
Female, n (%)	36 (49.3)	26 (42.6)
Eye site, n (%)		
OD	34 (46.6)	26 (42.6)
OS	39 (53.4)	35 (57.4)
Comorbidity, n (%)		
Hypertension	22 (30.1)	14 (23.0)
Diabetes Mellitus	12 (16.4)	8 (13.1)
Chronic kidney disease	5 (6.9)	2 (3.3)
Glaucoma	7 (9.6)	8 (13.1)
LogMAR VA, mean (SD)		
Baseline	0.92 (0.352)	0.89 (0.338)
1-year	0.93 (0.569)	0.95 (0.606)
2-year	0.97 (0.629)	0.97 (0.629)
CRT, mean (SD)		
Baseline	527.3 (160.5)	606.5 (205.9)
1-year	338.6 (168.5)	355.3 (170.0)
2-year	316.0 (146.7)	301.0 (123.7)

ranibizumab

CRT ↓ 1-year (527.3 vs. 338.6 μm, p<0.001)
2-year (527.3 vs. 316.0 μm, p<0.001)

LogMAR VA — 1-year (0.92 vs. 0.93, p=0.97)
2-year (0.92 vs. 0.97, p=0.40)

aflibercept

CRT ↓ 1-year (606.5 vs. 355.3 μm, p<0.001)
2-year (606.5 vs. 301.0 μm, p<0.001)

LogMAR VA — 1-year (0.89 vs. 0.95, p=0.30)
2-year (0.89 vs. 0.97, p=0.05)

Conclusions

- Significant reductions of CRT without clinical improvements of VA in CRVO eyes treated with intravitreal ranibizumab or aflibercept in Taiwan's clinical practice.
- Future studies should determine the benefits of CRT reductions on other long-term visual outcomes in CRVO patients.

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