Introduction: Intravitreal injections of anti-vascular endothelial growth factor (VEGF) have been considered a milestone in the treatment of exudative age-related macular degeneration (eAMD). However, the increasing incidence of AMD and the burden of frequent visits and injections, overcharge both the patient and the healthcare system. Real-world solutions depend on the implementation of fixed treatment protocols aimed at optimizing the number of clinical evaluations and treatments while guaranteeing good functional outcomes.

Purpose: To compare the real-world efficacy of intravitreal aflibercept and ranibizumab administrated in a fixed regimen, for the treatment of neovascular AMD.

Methods: Retrospective analysis of non-randomized treatment-naïve patients diagnosed with neovascular AMD that started an intravitreal regimen with either aflibercept or ranibizumab from January 2015 to January 2016 at Centro Hospitalar e Universitário de Coimbra (CHUC). Baseline evaluation included a complete ophthalmological examination complemented with multimodal retinal imaging. The participants were then submitted to a three-month loading dose (months 0, 1 and 2) with intravitreal aflibercept or ranibizumab. At month 3, best-corrected visual acuity (BCVA) and optical coherence tomography (OCT) were performed and the treatment proceeded with bimonthly injections in a fixed regimen. BCVA and OCT examinations were repeated at months 7, 12 and 18.

Results: We included 66 eyes from 74 naive patients, 55.4% females with a mean age of 80.02 years. From the included participants, 36 followed a fixed regimen with aflibercept and 29 with ranibizumab, both groups being demographically similar and both with a mean number of 8.9 injections at the final visit. The mean baseline BCVA was 69.03 letters for the aflibercept group and 67.07 letters for the ranibizumab group. After the loading dose, the mean difference in BCVA was +0.7 letters in the aflibercept group versus +0.5 letters in the ranibizumab group (p=0.29). At the 12 month visit, the difference in BCVA was +2.1 letters in the aflibercept group versus +1.1 letters (p=0.07) in the ranibizumab group. At the last visit (month 18), the difference in BCVA was +2.5 letters versus -1.5 letters (p=0.06), in the aflibercept and ranibizumab group, respectively. The mean difference in the central retinal thickness (CRT) was significantly superior in the aflibercept group (-119.4 versus -28.2 after the loading dose [p<0.05] and -147.2 versus -50.0 after 18-months [p<0.05], respectively).

Conclusion: We compared real-world outcomes between ranibizumab and aflibercept administrated in a fixed protocol of three monthly injections followed by bimonthly injections intercalated with VA and OCT assessments, over an 18-month follow-up. We found similar visual outcomes in both treatment groups and a significantly superior mean reduction in the CRT in the aflibercept group, both after the loading dose and in the last visit.