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| **Retinal morphology and risk factors for the development of macular atrophy during extended follow up in the IVAN trial** |
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| **Study Group:**IVAN study group |
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| **Purpose:**To describe retinal morphology and risk factors for development of macular atrophy (MA) after release from protocol (exit) during the extended follow up period in participants in the IVAN clinical trial.  **Methods:**Of the 610 participants in the IVAN trial, 413 were alive in 2017; 408 agreed to take part in the follow up evaluation. We also had approval for passive collection of data for participants who had died during the extended follow up period (n=124). Any available imaging modality (color, OCT, FA and autofluoresence (AF)) from both IVAN study and contralateral eyes at the most recent routine visit or from a final study visit (in those who agreed to attend) were graded by trained graders at netWORC UK. The following morphological features were measured: total lesion size, retinal thickness at fovea, subretinal fluid (SRF) presence and thickness, presence and thickness of pigment epithelial detachment (PED), and presence and area of intra and extralesional macular atrophy (ILMA and ELMA). Logistic regression was used to assess the effects of demographic and morphological characteristics, and randomized allocations, on the incidence or worsening of ILMA and GA in the study eye.  **Results:** Median length of follow up (FU) from IVAN exit to date of imaging was 4.7 (2.3, 5.4) with 208 participants having 5 years of FU . Study eye lesion size doubled from 5.8mm2 to 9.6mm2. Foveal center point thickness reduced from 140µm (110.0 , 180.0) to 118.5µm (85.0,152.0). The proportion with SRF reduced from 31.8 to 3.9%. The mean height of SRF fell from 90 (70.0, 140.0) to 18.0, 103.0). PED prevalence rose from 81.9% to 94.5% but height reduced from 150.0 (100.0, 230.0) to 85.0 (46.0, 142.0). Age was the sole risk factor for development or worsening of ILMA. Protective associations found for SRF and classic CNV at IVAN exit were reduced and not significant but remained in the same direction. Risk factors for ELMA were age and presence of ELMA in the fellow eye.  **Conclusions:**Neovascular lesion activity diminished over time with few eyes having SRF at the most recent visit. Although the frequency with which PED was observed increased the height of the PED reduced. All follow-up OCT images were spectral domain but about half of the OCT images at IVAN exit were time domain; this may have caused the prevalence of PED at IVAN exit to have been under estimated |