Evaluation of function and morphology in different macular diseases and treatment results.

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In the Western world, age-related macular degeneration (AMD) is the most common cause of severe visual decline in people over the age of fifty. The condition is divided into the untreatable dry AMD and treatable wet AMD. Established treatment consists of repeated intravitreal administration of anti-vascular endothelial growth factor (anti-VEGF). Undertreatment has been a worldwide challenge. New treatment patterns and increased number of injections are highly correlated with better visual outcome and quality of life (QoL).

ABCA4-associated retinal degenerations are recessively hereditary disorders with a wide range of variation and progression, including photophobia, decline of visual acuity (VA), visual field, and colour vision. Due to about 1000 possible known mutations in the ABCA4 gene, it is challenging to predict the phenotype and severity of the retinal degeneration.

In the first study, we compared two different time cohorts of patients with treatment-naïve wet AMD, 2007-2010 vs. 2009-2013, to evaluate change in number of injections, VA and QoL (1). We found no increase in number of injections or VA. The overall QoL showed a tendency to increase in the second cohort compared to a decline in the first.

In the second study, we looked at retinal morphology and function in patients with ABCA4-associated retinal degeneration (2). Patients were divided in three groups with increasing degree of visual field defects. Increased visual field loss correlated well with functional and morphological changes. Electrophysiological tests showed prolonged implicit time to be predictive for progression on long-term follow-up.

The manuscript presents characteristics from the Swedish Macula Registry to predict VA below national treatment criteria due to wet AMD during a two years follow-up (3).

The upcoming project is a prospective clinical study to compare the outcome of two different treatment regimen of wet AMD with aflibercept, an anti-VEGF drug, over 18 months.

Change of treatment patterns takes more time than expected to implement in a real-life clinical setting to improve treatment outcome for patients with wet AMD.

Early delay of implicit time might be clinically used to predict future progression in ABCA4 retinal degeneration.
Publications


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3. Twelve percent of 6142 patients treated for neovascular age-related macular degeneration (nAMD) presented with low visual outcome within two years. Analysis from the Swedish Macula Registry (SMR). **Schroeder M**, Lövestam-Adrian M