Translation from Romanian

Stargardt's Disease

DEFINITION

→ Rare ophthalmic condition, usually characterized by a progressive loss of central vision, associated with irregular yellow-white macular and perimacular lesions and an atrophic central macular lesion with a "beaten bronze" appearance.

PREVALENCE is of **1/8.000 – 1/10.000**

ASPECTE CLINICAL ASPECTS

→ Clinical: The disease usually begins in the first **two decades of life**, although symptoms may occur in adulthood and up to the seventh decade.

- →Although the course and severity of the disease vary widely, Stargardt's disease (STGD1) is usually characterized by a progressive loss of central vision that causes blurred vision and, occasionally, increasing difficulty in adapting to the dark.
- → Peripheral vision is usually normal.
- → Most affected people also have an altered color vision.
- → Photophobia may be present.

GENETICAL ASPECTS

→ The disorder is linked to mutations in the **ABCA4** gene, which encodes a transporter **(ABCR)** which binds adenosine triphosphate (ATP) specifically expressed in retinal cones and rods. Defects in the ABCR function cause the accumulation of cytotoxic derivatives, mainly **lipofuscin pigments** in photoreceptors and retinal pigment epithelial cells (RPE), eventually causing RPE cell death and subsequent loss of photoreceptors.

→ **ABCA4** gene mutations have been linked to a spectrum of phenotypes ranging from STGD1 to cone and rod dystrophy and severe early-onset retinal dystrophy.

→ The condition is transmitted autosomal recessively or autosomal dominantly.

The clinical **DIAGNOSIS** is based on the ophthalmological examination consisting of:

- visual acuity and visual field testing
- ophthalmoscopy
- electroretinography (ERG)
- fluorescein angiography (FA)
- background autofluorescence (FAF) and
- optical coherence tomography (OCT), which reveals:
  - ✓ macular abnormalities (progressive atrophy) often in a "beaten bronze pattern" and white-yellow pisciform lesions that can be seen in the macula, but can extend beyond the vascular arches. These lesions are hyper-autofluorescent on FAF images.
  - ✓ Fluorescein angiography reveals the characteristic "dark choroid"

("silentium coroidian") at approximately **85%** of the patients.

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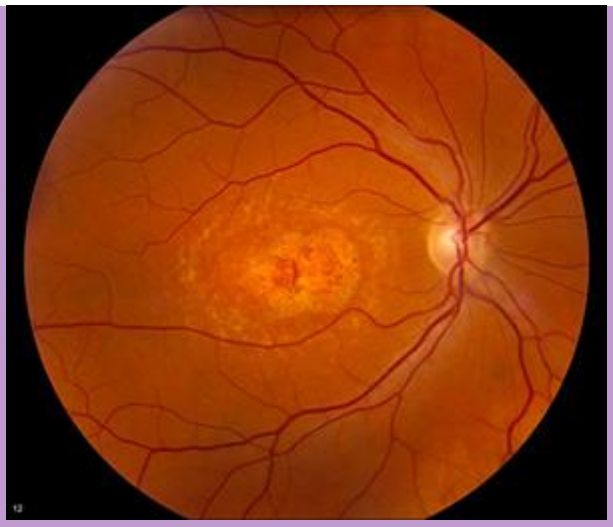
→ The diagnosis can be confirmed by the **genetic testing of the ABCA4 gene.**

PREVENTIVE MEASURES to slow the progression of the disease include avoiding overexposure to light, wearing sunglasses and avoiding the intake of vitamin A supplements.
→ Regular eye examinations are recommended. Currently, various **TREATMENT** options are being developed → various oral medical treatments to prevent the accumulation of lipofuscin in Stargardt's disease are being tested. These treatments block the action of certain retinal enzymes (RPE65 / RBP4 / LRAT / RDH5), replace vitamin A with a deuterated form of vitamin A (ALK001) or help remove lipofuscin by breaking down lipofuscin.

PROGNOSIS Due to the high clinical variability, the prognosis depends on certain parameters (especially the age of onset and electroretinographic findings) that can help the clinician to provide the patient with an indication of the evolution of the disease.
→ **STGD1** can progress rapidly in a few months or gradually in a few years, leading to a severe decrease in visual acuity.

→ Usually, peripheral vision is unaffected, although some patients may progress to a cone and rod dystrophy phenotype that affects peripheral retinal function.

→ Genetic counseling should be offered to people with the disease-causing mutation, informing them that there is a 25% or 50% risk of transmitting the mutation to offspring.



Img.1: Macular lesion with a "beaten bronze" appearance, observed at the fundus examination of the eye in Stargardt's disease

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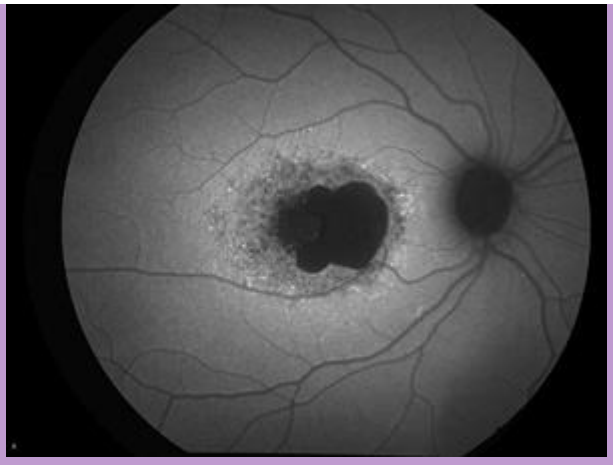

Img. 2: Autofluorescence – "silentium coroidian" – in the Stargardt Disease

Source : https://www.nei.nih.gov/learn-about-eye-health/eye-conditions-and-diseases/stargardt-disease

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I, BURA TEODORA - NATALIA, certified interpreter and translator for English, by virtue of the authorization no. 35530/20.03.2013, issued by the Ministry of Justice of Romania, hereby certify the accuracy of the translation from Romanian into English.

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