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ADVANCES IN OPHTHALMOLOGY AND OPTOMETRY

Autoimmune Retinopathy

Challenges in Diagnosis and Management

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Keywords

• Autoimmune retinopathy • Cancer-associated retinopathy
• Melanoma-associated retinopathy • Retinal degeneration • Antiretinal antibodies
• Rituximab • Paraneoplastic

Key points

- Presence of antiretinal antibodies alone does not establish the diagnosis of autoimmune retinopathy.
- A combination of clinical presentation and diagnostic testing results consistent with the disease and positive antiretinal antibodies are needed to establish the diagnosis.
- Deeper understanding of the pathogenicity of different antiretinal antibodies and standardization of antiretinal antibody tests are needed for improved diagnosis.
- The mainstay of treatment is immunosuppression, with multiple agents having shown moderate success in stopping disease progression.
- Detailed immunologic profiling of patients with AIR is needed to improve diagnostic and therapeutic approaches.

INTRODUCTION

Autoimmune retinopathy (AIR) is an inflammation-mediated retinopathy manifested by electroretinography (ERG) signal depression and is differentiated into the paraneoplastic subtypes, cancer-associated retinopathy (CAR),

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melanoma-associated retinopathy (MAR), and nonparaneoplastic AIR (npAIR) (Fig. 1) [1]. If the optic nerve also is involved, the terms autoimmune-related retinopathy and optic neuropathy are used. In all forms of AIR, the leading hypothesis for the underlying pathophysiology is molecular mimicry between retinal proteins and other antigens. In CAR and MAR, the inciting antigens are tumor antigens. In npAIR, the antigens have been hypothesized from infectious proteins or regressed malignancies [2].

Antiretinal antibodies (ARA) are present in patients with AIR and are believed to lead to apoptotic retinal cell death. Although ARA tests are highly sensitive, they are not specific for AIR and can occur in healthy individuals and in patients with other eye diseases [3,4]. Therefore, positive ARA alone do not lead to the diagnosis of AIR, and a combination of ERG abnormalities with or without visual field (VF) abnormalities, positive ARA, and no evidence of hereditary and degenerative retinal diseases, such as retinitis pigmentosa (RP), are essential criteria and needed to make the diagnosis [2].

Also, because this disease is rare, it is important for eye-care physicians to recognize its existence promptly because early detection has implications not only for eventual visual preservation, but also for the patient's overall health and survival, given the possible association with underlying malignancies. The disease often goes undetected because patients have vague symptoms and their slit lamp examination is unremarkable. Also, the diagnosis requires retinal dysfunction on ERG testing, and ERG is not readily available in most eye clinics. There has been increased awareness of this disease in recent years, but delayed diagnosis is still prevalent.

This article summarizes the diagnostic and therapeutic challenges of AIR and emphasizes the importance of future refinement of ARA diagnostic assays and the need for expanded data regarding treatment protocols. The ability for eye care physicians to better serve patients with AIR is predicated on the ability to have more informative ARA testing annotated to indicate probable pathogenicity of different antibodies and additional immunologic markers that corroborate an active autoimmune process; and dissemination of information

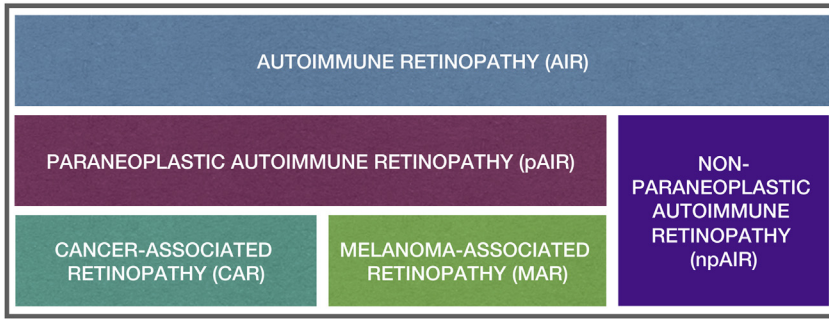

Fig. 1. Different subtypes of autoimmune retinopathy.