

Review article on granulomatous and non granulomatous uveitis and its clinical features

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Abstract: Reviewing pertinent data and recent articles on anterior uveitis is our focus. In the end, 11 studies were picked and assessed. In this review study, we covered anterior uveitis prevalence, clinical characteristics, granulomatous and non-granulomatous uveitis.

Keywords: Anterior uveitis, granulomatous and non granulomatous uveitis.

Introduction: Uveitis is the term used to describe the inflammation of the iris, ciliary body, or choroid, which are all components of the uveal tissue. It happens 15-60 times per 1000 person-years and affects 30-180 people per 1000 people [1]. According to the location of the inflammation, it can be classified anatomically as anterior, intermediate, posterior, or panuveitis; etiologically as infectious or non-infectious uveitis; and histopathologically as granulomatous or non-granulomatous uveitis depending on the body's immune reaction to the underlying cause of uveitis [2]. Up to 20% of legal blindness in the West and 25% in developing nations can be attributed to uveitis, which is the sixth most prevalent cause of visual loss in the industrialised world [3]. Uveitis can result in devastating vision loss. Less prevalent than anterior uveitis, noninfectious intermediate uveitis, posterior uveitis, or panuveitis are also associated with a significant risk of ocular problems, especially in patients with persistent disease. The main vision-threatening side effects of uveitis include glaucoma, maculopathy, and cataract development. These issues are becoming more common in the general older population.

Granulomas may arise as a result of viral or non-infectious causes of granulomatous uveitis, an inflammation of the uveal tract. It may be connected to a systemic disease, including crippling and life-threatening disorders, for which ocular manifestations may be the first sign, and it may affect any component of the uveal tract. The management of patients with granulomatous uveitis is discussed in this exercise, which also emphasises the importance of the healthcare team [4]. While lymphocytes and plasma cells commonly infiltrate nongranulomatous uveitis, epithelioid and giant cells can also be present in granulomatous reactions.

Acute anterior uveitis (AAU), the most prevalent type of nongranulomatous anterior uveitis, is correlated with the HLA-B27 genotype in 50–70% of individuals. Although the fundamental aetiology of iritis, also known as iridocyclitis, is typically unknown, some ocular and systemic illnesses may play a role [5].

According to the Standardization of Uveitis Nomenclature (SUN) recommendations, uveitis is classified by the major anatomic site of the inflammation and whether it is brought on by an infectious source or is linked to an immune-mediated disease [6]. Uveitis is the primary cause of macular edema, ocular hypertension, or retinal ischemia, accounting for 5% of cases of legal blindness (central visual acuity of 1/10 or less in the better eye) [7]

Prevalence of uveitis: Uveitis is a common inflammatory eye condition that can impair vision. It has an annual incidence of between 17 and 52 per 100,000 people and a prevalence of between 38 and 370 per 100,000 people [8]. The condition primarily affects the young, middle-aged, and youngsters. Up to 10% of those with significant vision impairment and blindness have uveitis and associated consequences [9]. Up to 90% of uveitis cases include anterior uveitis (AU), and about 50% of people who develop acute uveitis (AAU) have the human leukocyte antigen B27 (HLA B27) gene. Ankylosing spondylitis (AS), reactive arthritis (ReA), and other spondyloarthropathies (SpA) are all substantially correlated with HLA B27 [10]. Despite the fact that the pathogenetic mechanism(s) at work are unknown, these links to human disease are among the strongest of any HLA antigen [11].

Clinical finding of uveitis: First, trauma or any other non-uveitis entities should be ruled out when a person is suspected of having uveitis or any type of intraocular inflammation.

Anatomical classification of uveitis:

I) Anterior uveitis: Anterior uveitis is an inflammation of the uvea's anterior structures, namely the anterior chamber and the iris, with the majority of cases occurring anteriorly. Based on the symptoms we observe, it is further divided into granulomatous and non-granulomatous. Mutton fat KPs and Granulomatous KPs are the hallmarks of Granulomatous anterior uveitis. The symptoms of non-granulomatous anterior uveitis include fibrin particles in the AC, hypopyon, and a normal fundus. Look for iris nodules, peripheral anterior uveitis hypopigmented areas in the inferior fundus, central KPs, sectoral iris atrophy, sunset glow fundus, and high IOP as symptoms of granulomatous anterior uveitis.

II) Intermediate uveitis: The anterior vitreous, pars plana, and peripheral retina are inflamed. Intermediate uveitis linked to systemic conditions such multiple sclerosis, pulmonary fibrosis, cutaneous nodules, and bell's palsy. Keep an eye out for indications including snow banks, CME, and peripheral pigmented chorio retinal atrophy (CRA).

III) Posterior uveitis: When we perform an examination, we look for signs of posterior uveitis, such as yellow spots or patches in the fundus, dense vitritis, and the absence of snowball opacities. Next, we identify the primary lesion, which may later result in retinitis, retino-choroiditis, retinal vasculitis, choroiditis, or posterior scleritis.

IV) Panuveitis: Sight, visual function, and functional vision are severely threatened by the uveal part's overall inflammation. Uveitis can also be caused by non-inflammatory reasons, which should be ruled out quickly and effectively treated to preserve eyesight.

With a 1 mm conical beam, anterior chamber cells are clinically graded according to the SUN system, which includes:

Grade 0 : <1 cells in the field.

Grade 0.5+ : 1–5 cells in the field.

Grade 1+ : 6–15 cells in the field.

Grade 2+ : 16–25 cells in the field.

Grade 3+ : 25–50 cells in the field.

Grade 4+ : 50+ cells in the field.

The anterior chamber flare grading scale used by SUN comprises:

Grade 0 : none.

Grade 1+ : faint.

Grade 2+ : moderate (iris and lens detail clear).

Grade 3+ : marked (iris and lens detail hazy).

Grade 4+ : intense (fibrin/plastic aqueous) Grading the level of inflammation is critical in initiating and monitoring the response to treatment.

Granulomatous uveitis: It is sudden in onset, chronic, and accompanied by iris nodules, posterior synechiae, photophobia, mild to moderate discomfort, and impaired vision. The presence of mutton fat keratic precipitates is one of the main distinguishing traits. The aetiology, geographic location, and ethnic makeup all affect the epidemiology of granulomatous uveitis. For instance, tuberculosis is a frequent cause of granulomatous uveitis in regions where the disease is endemic, such as several developing nations like Egypt and India. However, it is uncommon in wealthy nations like the United States. However, after the HIV pandemic, incidences of tuberculous uveitis have returned to the United States [12]. Although less common in Asians than in whites, sarcoidosis may be more common in blacks than in whites. Asians are also frequently affected by Vogt-Koyanagi-Harada illness, which is a prevalent cause of non-infectious uveitis [13]. Uveitis is frequently brought on by toxoplasmosis in Asia, South America, Central America, and some regions of Africa [14]. While Lyme disease is prevalent in North America and Europe, trematode-induced granulomatous uveitis is more common in Egypt and India [15]. Blau syndrome is more common in white people [16].

Non -Granulomatous : The condition is abrupt in onset and character, accompanied by photophobia, somewhat impaired vision, and fine white keratic precipitates. While lymphocytes and plasma cells commonly infiltrate nongranulomatous uveitis, epithelioid and giant cells can also be present in granulomatous reactions. Acute anterior uveitis (AAU), the most prevalent type of nongranulomatous anterior uveitis, is correlated with the HLA-B27 genotype in 50–70% of individuals. Although the underlying aetiology of iritis or iridocyclitis is mostly unknown, some ocular and systemic disorders may play a role [17].

Discussion : In this review paper, we only touched on a handful of the numerous studies that have been conducted on granulomatous and non-granulomatous ulcers.

In a study conducted by Esra Kardeş, Kansu Bozkurt, and Ahmet Ergin, 37 patients (55.2% of whom were female) and 30 patients (44.7% of whom were male) were involved. A follow-up duration of 12.9 to 10.6 months on average was used (range: 1–45 months). Granulomatous keratic precipitates (KPs), corneal involvement (62.6%), iris atrophy (41.7%), and transiently raised intraocular pressure (IOP) (40.2%) were the most frequent ocular findings. During the follow-up period, recurrences were seen in 46.2% of the eyes, with a median recurrence rate of 1.0. All patients were given oral antiviral (acyclovir) medication and topical steroids during active episodes. 29.8% of the patients used oral acyclovir for an extended period of time. In contrast to complications rates and final visual acuity, recurrence rates were considerably lower in patients who used oral acyclovir for longer than 6 months. In 61.1% of eyes, the final visual acuity was better than 20/40, and the cause of the visual impairment was corneal scarring or cataract development.

In the study conducted by Esra Guney, Betül Ilkay Sezgin Akcay, and Huseyin Bayramlar, there were 41 patients (or 55.6% of the total) who were male and 34 (or 45.3%) who were female. At the presentation, the median age was 39.1 years. At presentation, 19 (25.3%) had bilateral disease and 56 (74.6%) had unilateral disease. Of those, 54 (72%) patients were able to have a definite diagnosis made. Fuchs uveitis syndrome (14.6%) and anterior uveitis associated with human leukocyte antigen B27 (14.6%) were the most frequent diagnoses. Uveitis caused by the herpes simplex virus was the second most frequent diagnosis, followed by Behcet's uveitis (6.6%). Behcet's illness (6.6%) was the systemic condition that was related to other diseases in 15 (20%) of the patients.

Conclusion :

Instead of just treating the presenting clinical signs and symptoms, the practitioner can more successfully manage the disease by fully comprehending the diagnosis and underlying cause. An exhaustive assessment of systems, knowledge of systemic disorders, and laboratory testing are the foundations for making the correct diagnosis of anterior uveitis. Instead of ordering a broad range of tests, lab evaluations should be customised to a specific diagnosis or set of diagnoses. Once a diagnosis has been made, a focused course of treatment can be chosen, or it may be decided to refer the patient to our ophthalmology colleagues. Each patient should receive treatment that is unique to them because inadequate care might result in problems and visual loss.

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