Updates on Pediatric Uveitis

Essay

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List of Abbreviations

AFB **Acid fast bacilli.**

ANA..... Anti nuclear antibody.

AS..... Ankylosing spondylitis.

AU..... Anterior uveitis.

CBC ..... Complete blood count.

CD ..... Crohns diease.

CFT..... Complement fixation test.

CME ..... Cystoid macular edema.

CNS ..... Central nevous sytem.

CSF ..... Cerebro spinal fluid.

CT ..... Computed tomography.

EBRT ..... External beam radiation therapy.

ELISA ..... Enzyme linked immuno sorbant assay.

ESR..... Erythrocyte sedimentation rate.

FHI ..... Fuch`s heterochromic iridocyclitis.

FTA- ABS..... Fluorescent treponemal antibody absorption.

HAART ..... Highly active anti retroviral therapy.

HIV ..... Human immunodefeciency virus.

HLA..... Human leucocyte antigen.

HSV..... Herpes simplex virus.

HZV ..... Herpes zoster virus.

IBD ..... Inflammatory bowel disorder.

ICG.....Indocyanine green.

IOFB.....Intraocular foreign body.

IU ..... Intermediate uveitis.

JIA..... Juvenil idiopathic arthritis.

JXG ..... Juvenile xanthogranuloma.

KPs..... Keratic precipitates.

MR ..... Magnetic resonance.

NNRTIs..... Non-nucleoside reverse transcritase inhibitors

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NSAIDs..... Nonsteroidal antiinflammatory drugs.

OLM.....Ocular larva migrans

PanU .....Panuveitis.

PCR.....Polymerase chain reaction.

PU.....Posterior uveitis.

RF..... Rheumatoid factor.

RRR.....Rapid plasma reagent.

RS..... Reiter syndrome.

SEM ..... Skin eye mucousmembrane.

SSPE ..... Subacute sclerosing pan encephalitis.

STD ..... Sexually transmitted diseases.

TB..... Tuberculosis.

UC ..... Ulcerative colitis.

VKH .....Vogt Koyanagi Harada.

INTRODUCTION

Uveitis is defined as inflammation of the uveal tract; the vascular coat of the eye that is composed of the iris, ciliary body and choroid.Inflammation of these structures is frequently accompanied by involvement of the surrounding ocular tissues, including the cornea, sclera, vitreous, retina and optic nerve (***Foster & Vitale., 2002).***

The diagnosis is based on an extensive review of a patient's family,personal history, detailed review of medical systems,systemic,and ocular examination (***Foster & Vitale., 2002).***

Uveitis in children and adolescents is not rare as previously reported. Children with uveitis comprised 2.2 to10.6 of the total number of uveitis patients examined and followed up in spcialised adult clinics *(**BenEzra & Cohen., 2005)*.

Early diagnosis and and prompt treatment significantly improve prognosis,but a young child first presentation with this disease is frequently accompanied by significant secondary complications ***(Mingels et al., 2005).***

Epidemiology:

Retrospective case study was done in Massachusetts Eye and Ear Infirmary (MEEI) from 1985 to 2003. 1242 cases, 53% were girls with mean age was 8 years. were reviewed retrospectively,revealed. Anterior uveitis was 56.9%, intermediate uveitis 20.8%, panuveitis 16%,and posterior was 6.3%. Nongranulomatous uveitis, was found in 77.6% and noninfectious in 85.7% (***Kump et al., 2005)***.

Classification of pediatric uveitis:

Pediatric uveitis can be classified by different ways; accordivg to the etiology,or anatomy. Infectious uveitis includes; HZV, HSV, HIV, cytomegalovirus measles, rubella, toxoplasmosis, tuberculosis, syphilis, and Lyme borreliosis. ***(Michael & Albert., 2000).***

Noninfectious uveitis could result from immunologic diseases as sarcoidosis, Behcet disease, Vogt Koyanagi Harada , sympathetic ophthalmia, and masquarade syndromes. Idiopathic uveitis includes; ankylosing spondylitis, juvenile idiopathic arthritis (JIA), Reiter's syndrome, psoriatic arthritis, inflammatory Bowel disorders, Fuch`s heterochromic

iridocyclitis, kawasaki disease and interstisial nephritis ***(Michael & Albert., 2000).***

Anatomical classification of uveitis could be

Anterior non-granulomatous uveitis includes juvenile idiopathic arthritis, ankylosing spondylitis, Reiter's disease, psoriasis, inflammatory bowel disease, nephritis, Herpes simplex virus, lyme disease, and leukemia. Anterior Granulomatous Uveitis includes sarcoidosis, syphilis, Herpes simplex virus, tuberculosis, and Bechet's disease. Intermediate Uveitis includes; JIA , Lyme disease, and Sarcoidosis **.** Posterior Uveitis includes; toxocariasis, toxoplasmosis, leukemia, tuberculosis, intraocular foreign body, Vogt-Koyanagi Harada syndrome, cytomegalovirus, HSV, VZV, inflammatory bowel disease, syphilis, Bechet's disease, kowasaki disease, and sarcoidosis ***(Foster & Vitale., 2002).***

Panuveitis includes; sarcoidosis, Behcet disease, VKH, tuberclosis, syphilis, Herpetic uveitis, lyme disease, toxoplasmosis, toxcariasis, Fuch`s uveitis, sympathetic ophthalmia, masquerad syndromes (Retinoblastoma, leukemia, and Intraocular foreign body) ***(Foster &Vitale., 2002).***

Uveitis could also be Classified in relation to the age:

Most common causes of uveitis in infants (0-2) years includes**;** HSV, and retinoblastoma. Most common causes in toddlers and school age children (2- 10) years includes; toxoplasmosis, leukemia, Vogt- Koyanagi – Harada syndrome, and JIA. Most common causes in adolescents includes; JIA, VKH, toxoplasmosis, AS, sarcoidosis, Behcet disease, and intraocular foreign body. Most common causes in adolescents (10- 16) includes; JIA, VKH, pars planitis,AS, sarcoidosis, Behcet disease, intraocular foreign body ***(Foster &Vitale., 2002).***

In this essay we will discuss pediatric uveitis in relation to the etiology

ANTERIOR UVEITIS

A clear understanding of what causes anterior uveitis in children presents the ophthalmologist with greatest opportunity for preventing the serious complications associated with this disease ***(Conrad &Giles., 1998).***

Aetiology of anterior uveitis:

Causes of anterior uveitis in children may be classified broadly as infectious, and noninfectious. The common, and important infectious causes are viruses e.g herpes simplex, herpes zoster, rubella, measles, HIV, and cytomegalovirus. Bacterial infection as tuberculosis in children, but is uncommon, and lyme borelliosis ***(Foster & Vitale., 2002).***

Noninfectious causes of childhood anterior uveitis are more common; the strongest association is with juvenile idiopathic arthritis. In JIA the affected patient may be asymptomatic as the process quietly proceed to band keratopathy, cataract, and glaucoma. Spondylo arthropathies (e.g, AS, psoriatic arthritis, Reiter syndrome, inflammatory bowel disease) are also associated strongly with nongranulomatous anterior uveitis. Sarcoidosis is an important cause of panuveitis, but may present as an isolated nongranulomatous anterior uveitis ***(Foster & Vitale., 2002).***

Clinical Picture of Anterior Uveitis:

History: Inquire about the patient's medical history if thers`s a history of arthritis or joint pain as in JIA, sarcoidosis, ankylosing spondylitis.

- Vertigo may be present inVKH.
- Diarrhea, or GIT disorders found in inflammatory bowel disease.
- Headaches and neurologic complaints present in VKH, Behçet's disease, Lyme disease, or herpes uveitis.
- Oral or genital ulcers: are common manifestations of Behçet's disease, and Reiter's syndrome.

Skin rashes: may be present in lyme disease, Behçet's disease, and sarcoidosis ***(Foster & Vitale., 2002).***

Symptoms

Acute anterior uveitis is characterized by photophobia, pain that may be refrred to the temple or periorbital region, redness, Mild blurring of vision ,and lacrimation ***(Kaniski &Menon., 2003).***

Chronic anterior uveitis may be asymptomatic or give rise to mild redness and the perception of floaters in verbal and aware children ***(Kaniski and Menon, 2003).***

Signs

Vision: Visual acuity is usually normal or only slightly decreased.

Intraocular tension: is often lower in the eye with iritis than in the other.

Conjunctiva: Typically, the eye has a perilimbal injection termed ciliary flush. Less commonly, generalized redness of the bulbar conjunctiva may be present.

Cornea: *Keratic precipitates* (KPs) may be present. These clusters of WBCs collect on the endothelium. Their characteristics and distribution may indicate the probable type of uveitis. KPs are classified into:

a. *Endothelial dusting* by myriads of cells occurs in acute anterior uveitis, as well as during subacute exacerbations of chronic inflammation.

b. *Medium-sizeed KPs* occur in most types of acute and chronic anterior uveitis.

c. *Large KPS* are usually of the mutton fat variety, with a greasy, waxy appearance, typically occurring in granulomatous uveitis.

d. *Old KP* are pigmented and ,if large may develop a ground-glass appearance.

e. *Stellate KPs* are unique, fibrillar, dendriform, microscopic lesions found throughout the endothelium. Stellate KPs typically is seen in Fuchs heterochromic iridocyclitis, but they commonly are noted in herpes simplex, herpes zoster, and CMV infections. Stellate KPs can be seen in toxoplasmosis ***((Foster & Vitale., 2002)***.

Anterior chamber

Flare: resulting from extra protein in the aqueous, is usually present and can be graded as follows:

- 0 = Completely absent
- +1 = Just detectable
- +2 = Moderate (iris and lens detail clear)
- +3 = Marked (iris and lens detail hazy)