RECENT MODALITIES IN DIAGNOSIS AND TREATMENT OF CHRONIC PEDIATRIC UVEITIS

Essay

Submitted For The Fulfillment Of
The Master Degree (M.Sc) In
Ophthalmology

By

Mona Ahmed Abd-ElKarim Osman
M.B.B.Ch

Under Supervision Of

Prof.Dr.Hala Saad Eldin Ahmed

Professor Of Ophthalmology

Faculty Of Medicine, Cairo University

Prof.Dr .Ghada Ismail Gawdat

Professor Of Ophthalmology

Faculty Of Medicine, Cairo University

Dr .Ashraf Ahmed Nosseir

Lecturer Of Ophthalmology

Faculty Of Medicine, Cairo University

2012

ACKNOWLEDGEMENTS

*First of all, I would like to express my deepest gratitude to "**Allah**" the most Merciful who is praised for all His favors and blessings.*

*I would like to thank **Prof. Dr. Hala Saad ElDin,** Professor of ophthalmology, Cairo University, for her great help and support. It is a great honour to work under her supervision.*

*I would like also to express my sincere appreciation and thanks to **Prof. Dr. Ghada Ismail Gawdat**, Professor Of ophthalmology, Cairo University , who helped me a lot to finish this work.*

*Special thanks and Sincere appreciation to **Dr. Ashraf Ahmed Nosseir**, Lecturer of ophthalmology, Cairo University, for his keen supervision and help.*

Words can hardly express my sincere and great appreciation to my family: who stood by me through all this work, encouraged me and prayed for me.

Great acknowledgement and heartful thanks to my teachers and colleagues for their support, cooperation and continous help all the time.

INTRODUCTION

Uveitis is an inflammatory disorder involving inflammation of the uveal tract. It is classified as anterior, intermediate, posterior or panuveitis, depending on the part of eye affected by the inflammatory process.

In children, chronic uveitis is a relatively uncommon but serious disease, with the potential for significant long-term complications and possible blindness .Although frequently associated with an underlying systemic disease, e.g. juvenile idiopathic arthritis (JIA), a significant number of cases in children show no associated signs or symptoms, and are labelled as idiopathic .

In both very young and elderly patients, infections and neoplastic masquerade syndromes are relatively more common causes of uveitis than in other age groups .

There are differences between children and adults in the differential diagnosis and manifestations of uveitis that should be considered during evaluation . There may be a higher risk of some ocular complications such as uveitic glaucoma, and the presence of other unique complications, such as amblyopia, in young patients during follow-up .

The assessment includes visual acuity,external and motility evaluations, slit-lamp examination, intraocular pressure measurements, refraction, and fundus .Laboratory tests are performed according to the clinical presentation.

Recent ophthalmic investigations modalities are helpful in the diagnosis of pediatric uveitis.

Optical coherence tomography (OCT) is an imaging modality that allows high-resolution, cross-sectional imaging of the eye. It has been

shown to have significant role in various clinical situations. Anterior chamber (AC) cell grading has been reported with high-speed OCT in uveitis patients .

OCT can be utilized to assess all the parameters of inflammation, namely AC cells, keratic precipitates, fibrinous membrane, and endothelial infiltrates in eyes with clear and edematous cornea by manual and automated methods .

Cystoid macular edema (CME) is the cause of legal blindness in 8% of children with uveitis . OCT can be a useful adjunct to clinical biomicroscopy in the evaluation and treatment of pediatric uveitis-related CME .

Ultrasound biomicroscopy (UBM) is one of the new, non-invasive methods in the investigation of uveitis. The advantage of UBM is that it allows imaging of structures of the eye that cannot be seen otherwise. This technology allows quasi-histological sections of approximately 5 mm in depth to be obtained in vivo.It would be particularly helpful in cases with media opacities where it may guide the surgeon in choosing the optimal timing (i.e. inactive disease) for surgical intervention (e.g. cataract extraction).

Laser flare photometry provides an objective and quantitative, noninvasive, in vivo measurement that correlates with aqueous humor protein levels in the anterior chamber of the eye .

The first common step in treating non-infectious uveitis in children is topical application of corticosteroids. In case of failure to achieve remission and/or in the presence of complications and prognostic factors for visual loss, systemic corticosteroid administration in addition is usually required .When no quiescence is obtained, and/or in the case of reactivation and/or additional uveitis complications, the use of immunosuppressants is advocated as a second step. Among

immunosuppressants, methotrexate seems to be the first line steroid-sparing immunosuppressive approach, especially in patients with juvenile idiopathic arthritis. .When no quiescence is obtained, or in the case of too-frequent flares usually more than 2–3/year—, a biological modifier drug can be used in addition to topical/systemic corticosteroids.

Immunomodulation therapy is increasingly being used in various ocular inflammatory diseases, to avoid the effects of long-term steroid and immunosuppressive therapy and to induce remission in chronic disease.

Urgent surgery may be necessary for vision-threatening complications, such as ciliary membrane formation with ciliary body detachment, retinal detachment, or uncontrolled elevations of intraocular pressure .

Gene therapy is a novel form of drug delivery that enlists the synthetic machinery of the patient's cells to produce a therapeutic agent is a very attractive therapeutic option, as it carries the promise of more or less permanently curing a clinical condition .

In conclusion, as our understanding of the critical checkpoints in the pathogenesis of autoimmune ocular disease improves, more and more potential intervention points and candidate therapeutic targets are identified, new technologies emerge, promising more specific and more easily applied therapies .

Key Words:

Pediatric uveitis,investigations,ultrasonography,UBM,OCT,fluorescein angiography,corticosteroids,immunosuppressive drugs,biological therapy.

Aim of Work

Is to review the literature about the recent modalities used in diagnosis of chronic pediatric uveitis,including laboratory tests and imaging techniques and the contribution of these methods to the final diagnosis and plan of management, together with the recent treatment modalities and the therapeutic approach to these cases.

ABSTRACT

Abstract :

Pediatric uveitis is relatively uncommon,but comprises a serious group of diseases that can lead to significant ocular morbidity and vision loss.

The diagnosis and management of chronic pediatric uveitis is a challenge to the ophthalmologist, and needs the integration of data obtained from history,clinical examination and ancillary laboratory and ophthalmic investigations.

The ophthalmic investigation modalities :ultrasonography,UBM,Fluorescein and ICG angiography,laser flare photometry and OCT have a role in the diagnosis and follow up of the disease .Tissue and ocular fluid specimens are sometimes necessary.These tissue samples undergo cytological and microbiologic examination as well as molecular techniques e.g PCR for detection of infectious or neoplastic etiology.

The treatment of chronic pediatric uveitis was initially dependent on corticosteroids,both topically and systemically.However, the side effects of long term steroid therapy in children,especially concerning growth, led to the emergence of other (steroid-sparing) immunosuppressive therapies and the newer biological modifier drugs that addresses specific components of the immune system.

Surgical treatment is required in many cases of pediatric uveitis with complicatios which can not be managed with medical treatment,the commonest being cataracts,glaucoma , band keratopathy and vitreoretinal complications.Specific preoperative,operative and postoperative precautions are required in these cases to minimize complications and improve the outcome.

Key words:

Pediatric uveitis , investigations , ultrasonography , UBM , OCT, fluorescein angiography , corticosteroids , immunosuppressive drugs , biological therapy.

CONTENTS

List Of Figures

List Of Tables