DEPARTMENT OF OPHTHALMOLOGY
FACULTY OF MEDICINE PADJADJARAN UNIVERSITY
NATIONAL EYE CENTER CICENDO EYE HOSPITAL
BANDUNG

Case Report	:	Diagnosis Challenges in Panuveitis : Case Reports
Presenter	:	Daniel Cevry Edi Maulana
Supervisor	:	Rova Virgana, MD

Has been reviewed and approved by
Supervisor of Vitreoretina Unit

Rova Virgana, MD

Monday, January 4th 2021
07.30 A.M.

Diagnosis Challenges in Panuveitis: Case Reports

Abstract
Introduction: *Panuveitis is an inflammation in all uveal component of eye with no specific site for inflammation. Diagnosis and management of panuveitis remain challenge and difficult. This case report discusses patient with bilateral panuveitis.*
Case report*: Case one, A 34 year-old man came to Vitreoretina Unit with chief complaint of blurry vision since 10 month earlier. Visual acuity (VA) on right eye was 1/300, left eye was 1/60. There was an immature cataract in the both eyes. Posterior segments showed retinal detachment on right eye with extensive retinal necrosis on both eyes and subretinal hemorrhage on right eye. Patient was diagnosed with bilateral panuveitis with suspected retinal detachment on right eye. Patient were treated with prednisolone acetate eye drop, azathioprine orally and cyclopentolate eye drop.*
Case two, a 33 year-old woman came to Vitreoretina Unit with chief complaint of blurry vision since 2 month earlier. Visual acuity (VA) on right eye was 3/60, left eye was 0.8 LogMar. There were keratic precipitate on cornea, inflammatory cell on anterior chamber, iregular pupil, posterior synechia, and lens haziness. Patient was diagnosed with bilateral panuveitis with cataract complicata. Patient were treated with methylprednisolone orally, prednisolone acetate eye drop, and cyclopentolate eye drop.
Conclusion: *Panuveitis remain challenges in diagnosis and treatment. Comprehensive ocular examination of uveitis with history taking can provide important information regarding appropriate ancillary test and therapies tailored for specific diseases. Prompt diagnosis and therapies can control ocular and systemic condition.*
Keywords*: panuveitis, bilateral, diagnosis challenges*

I. Introduction

Uveitis is describes as a heterogeneous group of disorders that have in common inflammation of the uveal tract. Inflammation in uvea can extend to retina, sclera, cornea, and other eye structures. It can damage many vital eye tissue and can result in permanent visual loss, as it account for up to 25% of blindness globally. Classification by Standardization of Uveitis Nomenclature (SUN) Working Group is commonly used based on anatomy involved, categorized as anterior uveitis, intermediate, posterior, and panuveitis. Panuveitis need involvement of all structures of eye, such as anterior chamber, vitreous, retina, and choroid with no specific site of inflammation. Although less common

in population, panuveitis present significant challenges that may result in poorer visual outcome.[1-3]

A detailed and comprehensive of history taking can help in diagnosis of panuveitis because of its complexity and multifactorial in nature. Signs and symptoms of panuveitis may include eye redness and pain; blurring; light sensitivity; decreased vision; and floaters. The specific cause is unknown, but in some cases it occurs in association with other eye conditions, or with another condition or infection that also affects other body parts. Detailed ophthalmic examination is critical for both diagnosis and assessing response to therapy.[1-5]

In most textbooks, the exhaustive approach is presented with full battery of tests. It can be costly and time consuming, so it remain challenge for finding definitive diagnosis of panuveitis. This study was presented to report cases of panuveitis in Cicendo National Eye Hospital.[2,3,5]

II. Case Reports

Case one, a 34-year old man came to Vitreoretina clinic in Cicendo National Eye Hospital on November 11th 2020 with a chief complaint of progressive blurred vision in both eyes since 10 months ago, accompanied with recurrent redness. The patient had no history of using spectacle, trauma, long-term medication, and other systemic disease. The patient came first at January 2nd 2020 to Pavilion clinic with blurred vision in both eyes. On ophthalmology examination, his uncorrected visual acuity (UCVA) was 1/300 on the right eye and 0,2 on the left eye. Intraocular pressure of both eye was 13 mmHg and 16 mmHg in the right eye and left eye respectively. Slit lamp examination in the right eye showed the anterior segment within normal limit, but there were hazy vitreous and hazy lens. In the left eye, the anterior segment within normal limit with hazy lens and posterior segment showed retinal necrosis. The patient then underwent ultrasonography (USG) examination in right eye and fundus photography, and ordered for thoracic x-ray.

USG examination in right eye showed retinal detachment with vitreous opacity ec inflammatory cells dd/ fibrotic. Fundus photography showed extended retinal

necrosis in both eyes and subretinal hemorrhage in right eye. Thorax x-ray within normal limit. The patient diagnosed with bilateral panuveitis with suspected retinal detachment on right eye and immature senile cataract on both eyes. Patient got therapy of systemic corticosteroids, 56 mg methylprednisolone tablet once a day orally, and tappered off weekly and expected to follow up in 1 month. The patient did not come for follow up until July 30th 2020 due to Large Social Restriction Implementation, with same complaint. The patient then ordered to laboratory examination for Toxoplasma, Rubella, Cytomegalovirus, and HSV-1 (TORCH) and the results were equivocal for IgG Antitoxoplasma, reactive for IgG anti Rubella and IgG anti HSV. The patient then treated with 32 mg Methylprednisolone tablet once a day orally and tappered off weekly.

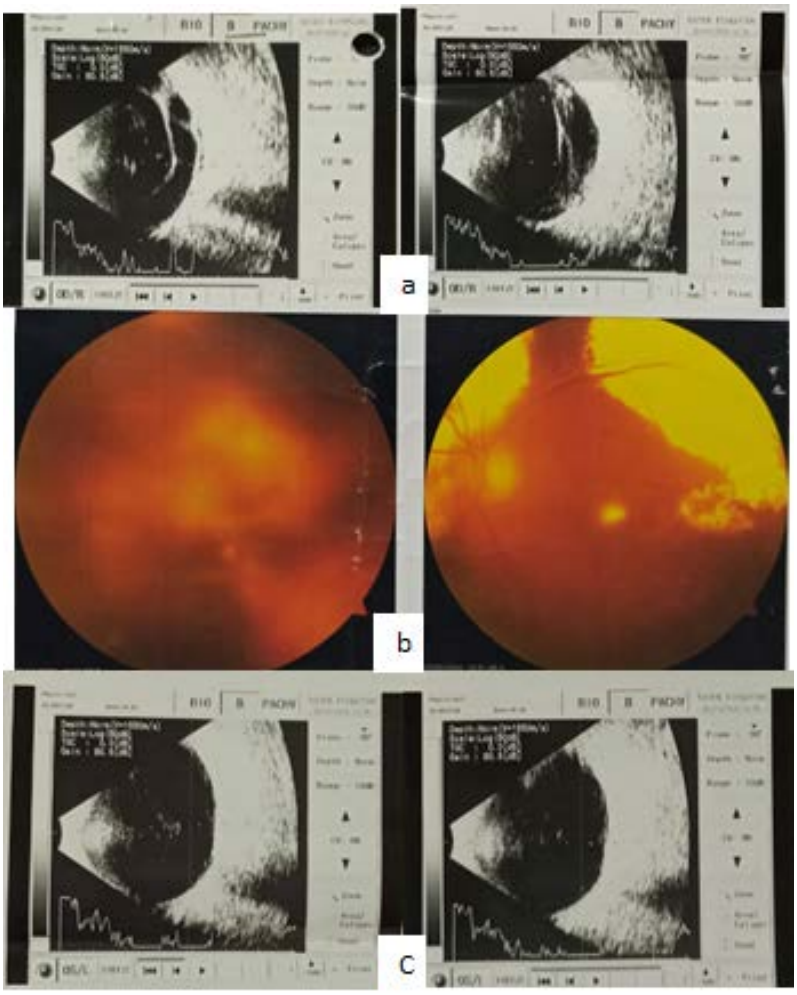

Figure 2.1 a. USG in right eye, b. fundus photography c. USG in left eye

On November 11th 2020 patient come for follow up, with UCVA 1/300 in right eye and 1/60 in left eye. The anterior segment of both eyes showed flare/cell +-/+- and vitreous cell +1 in right eye. The patient diagnosed with flare up bilateral panuveitis with suspected retinal detachment on right eye and immature senile cataract on both eyes. Patient then treated with Prednisolone acetate eye drop 6 times a day for both eyes, Cyclopentolate 1% eye drop 3 times a day for both eyes, and artificial tears 6 times a day for both eyes. Patient came again in November 30th 2020 with anterior segment of both eyes showed flare/cell +2/+2 and vitreous cell +1 in right eye, and added Azathioprine 50 mg 2 times a day orally to previous medication, and the treatment resumed. The patient cannot tolerate methylprednisolone orally. The patient expected for follow up in 2 weeks. On December 12th 2020, the inflammation subsided to flare/cell +1/+1 in right eye and flare/cell +-/+- in left eye, and the treatment resumed and evaluated in 2 weeks.

Case two, a 33-year old woman came to Vitreoretina clinic in Cicendo National Eye Hospital on November 30th 2020 with a chief complaint of progressive blurred vision in right eye since 2 months ago, accompanied with recurrent redness. The patient had no history of using spectacle, trauma, long-term medication, and other systemic disease.

On ophthalmology examination, the UCVA was 3/60 on the right eye and 0,8 LogMar on the left eye. Intraocular pressure of both eye was 14 mmHg and 13 mmHg in the right eye and left eye. Slit lamp examination in the both eyes showed keratic precipitate on cornea, flare/cell +1/+1, irregular pupil with posterior synechiae, and hazy lens with vitreous cell +1 in right eye. The posterior segment in both eyes were difficult to assess because of vitreous haziness so the patient underwent USG examination and fundus photography. The USG showed mild vitreous opacity ec inflammatory cells dd/ vitreous fibrosis. The fundus photography showed vitreous haziness on both eyes. The patient diagnosed with bilateral panuveitis with cataract complicata. The patient then ordered to laboratory examination for Toxoplasma, Rubella, Cytomegalovirus, and HSV-1 (TORCH), and treated with Methylprednisolone 48 mg orally once a day,

Prednisolone acetate eye drop 6 times a day for both eyes, Lansoprazole 30 mg 2 times a day orally, and Cyclopentolate 1% eye drop 3 times a day for both eyes. The patient expected for follow up in 1 weeks.

On December 7th 2020, the patient came for follow up, the result of TORCH examination not yet available. UCVA on both eyes at 1.0 LogMar, with the flare/cell subsided to +-/+- in right eye and +1/+1 in left eye. The treatment continued with Prednisolone acetate eye drop tappering off to 5/4 times a day, Methylprednisolone tappering off to 48 mg/40 mg a day, Lansoprazole 30 mg 2 times a day orally, and Cyclopentolate 1% eye drop 3 times a day for both eyes. Patient evaluated at 2 weeks.

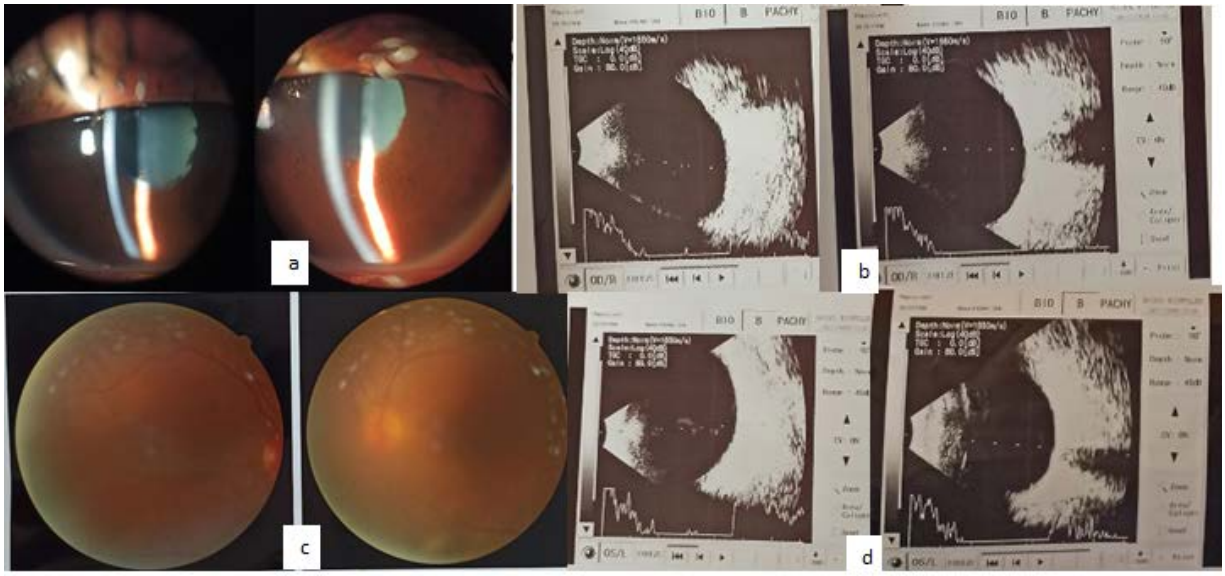

Figure 2.2 a. anterior segment of both eyes, b. USG in right eye, c. fundus photography d. USG in left eye

On December 21st 2020, the result of TORCH examination showed reactive in IgG toxoplasma, IgG rubella, and IgG HSV-1. The inflammation subsided in anterior segments of both eyes. Treatment continued with tappering off Methylprednisolone to 32/24 mg a day, Prednisolone acetate eye drop to 3/2 times a day both eyes, Lansoprazole 30 mg 2 times a day orally, and Cyclopentolate 1% eye drop 3 times a day for both eyes. Patient were evaluated at 2 weeks.

III. Discussion

Comprehensive ocular examination of uveitis can provide important information regarding appropriate ancillary test and therapies. Many inflammatory disease are chronic in nature and needed toxic therapy. It is critical to accurately assess whether the patient get benefit from treatment. The correct diagnosis for uveitis often challenging for ophthalmologist with many findings in signs and symptoms. The work-up for uveitis especially in panuveitis can be a challenge. With limited understanding for utility and limitation of diagnostic test can further delayed diagnosis and can lead to confusion and innacurate testing. Many of entities in panuveitis have no clear etiologies and no specific laboratory test. The absence of any diagnostic clues can makes idiopathic causes more likely, as contributed for 32,3% panuveitis cases in one study.[2-4,6]

General step in diagnosing panuveitis is forming differential diagnosis. It can begin by excluding infection and drug-induced, without overlooking the possibility of masquerade condition. There are no consensus yet in determining the optimal laboratory testing for panuveitis. Many panuveitis are defined by clinical apperances like Behcet disease, Vogt-Koyanagi-Harada disease, and sympathetic ophthalmia. These syndromes have no confirmatory laboratory tests, other than several with strong human leukocyte antigen (HLA) haplotype associations like Behçet disease with HLA-B51.[3,7,8]

Both cases presented in this study show bilaterality of the diseases. Nussenblatt et al proposed that common cause for panuveitis are syphilis, sarcoidosis, Vogt–Koyanagi–Harada syndrome, infectious endophthalmitis, and Behçet's disease. In parasitic condition such as toxoplasmosis can presented in bilaterality. Study by Engenhald et al in USA showed toxoplasmosis contributed to 4.3% on panuveitis cases, in contrast to study by Arevalo et al in Saudi Arabia that showed 35,1% cases caused by toxoplasmosis. Both cases screened for TORCH infection. Another common cause for panuveitis as shown in study by Areyalo et al is presumed-intraocular tuberculosis at 48,1%. The patients did not have history of tuberculosis and were screened for thoracic x-ray, the result within normal limit.[4,6,9,10]

Demographic conditions of both cases related to common cause of panuveitis at age 25-45, e.g. acute retinal necrosis, Behcet, toxoplasmosis, sarcoidosis, and idiopathic. Extended retinal necrosis in first case may caused by herpetic viruses, but it can also found in CMV retinitis and toxoplasmosis. Social condition like endemic area for tuberculosis, can be considered for screening. Suggested testing algorithm for panuveitis by Hansen et al can be seen in figure 3.1. Another approach for panuveitis were proposed by Cimino, seen in figure 3.2.[4,8,11]

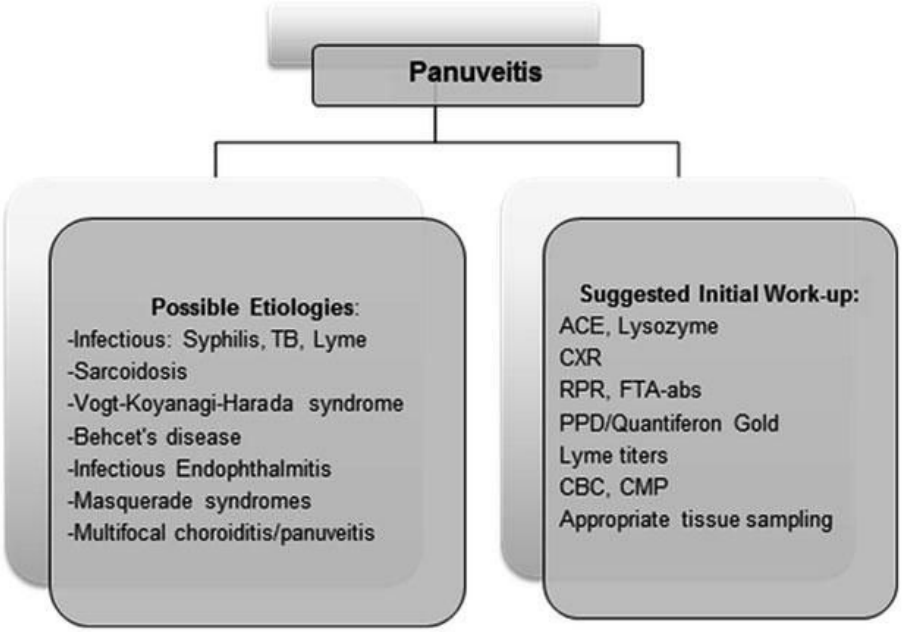

Figure 3.1 Panuveitis etiologies and work up
Source : Hansen et al[8]

Management for panuveitis are based on clinical conditions. When the cause of uveitis is infection, the goal of therapy is to eradicate the infectious organism while controlling inflammation, for noninfectious uveitis, the goal is to suppress and eliminate inflammation and to achieve remission. Degree of inflammatory condition can be a reason for giving systemic corticosteroid, as applied in both cases. Immunosupressant agent can be considered in second line therapy if no response to corticosteroid, but exact time to transition of immunosuppressant not yet defined. Azathioprine was given in first case. The patient were monitored closely for side effects.[2,3,12,13]

Visual prognosis for first case remains poor for high percentage of patients with retinal necrosis despite advanced theurapetic and surgical management, with no current protocol exist. Retinal detachments occur in 50% or greater patients with retinal necrosis. Visual prognosis for second case depend on response to therapy and the progression of cataract.[3,4,9]

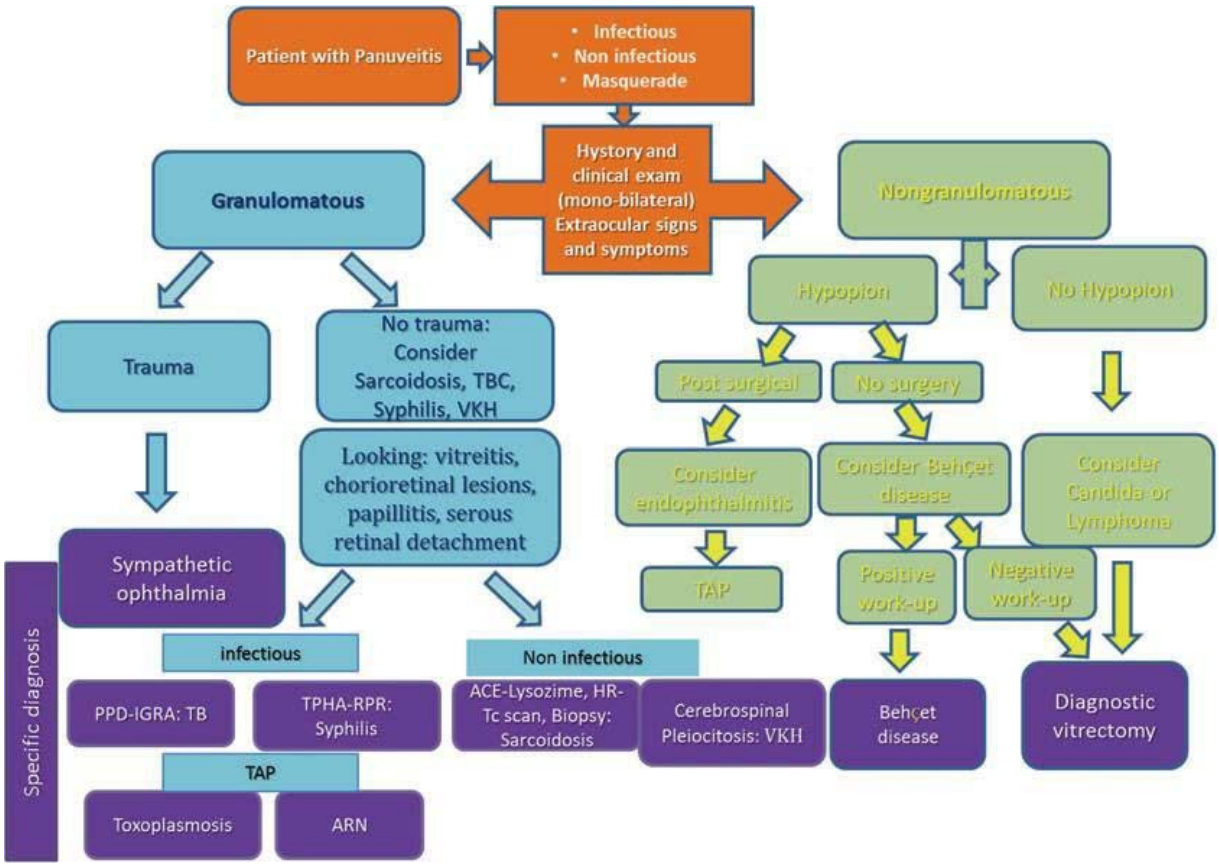

Figure 3.2 Panuveitis algorithm
Source : Cimino[11]

IV. Conclusion

Panuveitis remain challenges in diagnosis and treatment. Comprehensive ocular examination of uveitis with history taking can provide important information regarding appropriate ancillary test and therapies tailored for specific diseases. Prompt diagnosis and therapies can control ocular and systemic condition.

REFERENCES

1. American Academy of Ophthalmology. Basic and clinical science course section 9, Uveitis and ocular inflammation. San Francisco: American Academy of Ophthalmology; 2019-2020. Pg. 194-290.
2. Bansal R, Gupta R, Gupta A. Current approach in the diagnosis and management of panuveitis. Indian J Ophthalmol. 2010 Jan-Feb; 58(1): 45–54.
3. Margo CE, Harman LE. Uveitis. In : Kellerman R, Rakel D. Conn's current therapy 2020. 1st ed. Philadelphia:Elsevier. 2020. 519-523.
4. Nussenblatt RB, Whitcup SM. Uveitis fundamentals and clinical practice. 4th ed. Elsevier Health Sciences, 2010.
5. Joye A, Gonzales J. Diagnostic testing in uveitis. In : Lin, P, editor. Uveitis. Singapore:Springer. 2020.
6. Engelhard SB, Patel V, Reddy AK. Intermediate uveitis, posterior uveitis, and panuveitis in the Mid-Atlantic USA. Clinical Ophthalmology 2015:9 1549–1555.
7. Mustafa M, Muthusamy P, Hussain SS, et al. Uveitis : pathogenesis, clinical presentations and treatment. IOSR Journal Of Pharmacy. 2014: 4(12) : 42-47.
8. Hansen BA, Soukiasian SH. Approach to the laboratory, imaging, and molecular work-up for uveitis. In: Papaliodis GN, editor. Uveitis a practical guide to the diagnosis and treatment of intraocular inflammation. Cham : Springer. 2019.
9. Arevalo JF, Lasave AF, Gupta V, et al. Clinical characteristics and treatment of 308 panuveitis patients over 10 years: results from the KKESH uveitis survey study group. Ocular Immunology & Inflammation, 2018; 1–9.
10. Testi I, Tognon MS, Gupta V. Diagnostic challenges in granulomatous uveitis: tuberculosis or sarcoidosis?. Ocular Immunology and Inflammation. 2018; 00(00): 1–3.
11. Cimino L. Algorithm for work-up of panuveitis. In: Gupta V, Nguyen QD, LeHoang P, et al, editor. The uveitis atlas. New Delhi: Springer. 2020.
12. Rosenbaum JT. Uveitis: treatment. UpToDate. Waltham, MA: UpToDate; 2019.
13. Foster CS, Kothari S, Anesi SD, Vitale AT, et al. The ocular immunology and uveitis foundation (OIUF) preferred practice patterns of uveitis management. Survey of Ophthalmology. 2016 : 61 (01), 1-17.