J Nepal Health Res Counc 2025 Jan-March; 23 (66): 165-169

Clinical Characteristics and Visual Outcome of Vogt Koyanagi Harada Disease Patients

Jyoti Bastola Paudel,[1] Anu Manandhar,[2] Smita Shrestha[2]

[1]Department of Ophthalmology, Nepal Police Hospital, Maharajgunj Kathmandu, Nepal, [2]Department of Uveitis, Tilganga Institute of Ophthalmology, Gaushala, Kathmandu, Nepal.

ABSTRACT

Background: To evaluate clinical characteristics and visual outcome of Vogt-Koyanagi-Harada disease patients in Nepal.

Methods: Retrospective series of all the cases of VKH treated at Tilganga Institute of Ophthalmology from 1st July 2017 to 31st June 2022.

Results: Fifty-four cases were included, 18(33.33%) were male and 36 (66.67%) were female. Mean age was 41.47±15.57years and median age was 38 years. All cases were bilateral. Two patients had a complete presentation (3.7%), thirty an incomplete presentation (55.5%) and twenty-two had a possible syndrome (40.7%). Fortysix (85. 1%) patients presented at acute uveitic stage and eight (14.8%) presented at chronic recurrent stage. The most common extraocular finding in our patient population was headache (59.2%). Posterior segment findings included exudative retinal detachment in 40(74%), disc edema in 33(61.1%) and sunset glow fundus in 3(5.5%).

Conclusions: Bilateral panuveitis is the most common ocular manifestation of VKH and majority of eyes present with exudative retinal detachment. Oral prednisone with or without immunomodulatory therapy was the primary treatment.

Keywords: Immunomodulatory therapy; Nepal: panuveitis; vogt-koyanagi-harada disease.

INTRODUCTION

Vogt-Koyanagi-Harada disease (VKHD), also known as an uveomeningoencephalitic syndrome, is a bilateral granulomatous autoimmune disease that targets melanocyte-rich tissues, such as the eye, inner ear, meninges, skin and hair.[1] It frequently affects individuals of pigmented skin,

such as Asians, Middle Easterners, Hispanics and Native Americans.[2] It is more common in the adult population and females are affected more than males.[3] Most of the cases are bilateral; rarely, a unilateral presentation or delayed involvement of the other eye can also occur.[4]

Despite the fact that Vogt-Koyanagi-Harada syndrome (VKH) is reported to be common in Asian population, data from Nepal is very scant. Due to lack of enough reports, the disease is very much under-diagnosed leading to delayed diagnosis and treatment. So, this study was done to find the burden of visual impairment and blindness caused by VKH.

METHODS

This study was done after the approval of institutional review committee of Tilganga Institute of Ophthalmology(Ref: 04/2023). As this study was retrospective, we used existing data through TIO electronic medical record (EMR) of the uveitis department. The study included all cases of VKH treated at TIO from 1st July 2017 to 31st June 2022. The diagnosis was made according to revised diagnostic criteria for VKH disease.[5] Detail information regarding the patient, symptoms and duration of symptoms were noted. Visual acuity was taken with Snellen's chart. Intraocular pressure was taken with air puff or applanation tonometer. Slit lamp biomicroscopy including anterior chamber cellular reaction grading in 1 x1mm high powered beam at full intensity at a 45-60 degree angle

Correspondence: Dr Jyoti Bastola Paudel, Nepal Police Hospital, Kathmandu, Nepal, Email:jyotibastolapaudel55@gmail.com, Phone: +9779849100195.

and vitritis was graded according to SUN classification. Fundus evaluation was done with slit lamp and 90D lens and with indirect ophthalmoscope using 20 D lens. The details of the treatment given to each case and the clinical response to the given treatment, and the details of systemic findings associated with the disease and complications were noted in proforma. Data were taken at presentation, 1 week ,1mth, 3mths and 6mths follow up. All the data were filled up in a clinical proforma and entered in SPSS version 16 for analysis.

RESULTS

There were total 54 cases with VKH during the study period. Among the total 54 cases included, 18(33.33%) were male and 36 (66.67%) were female. The female to male ratio is 2:1.

The age range was 14 to 74 years and the mean age is 41.47±15.57 years and median age is 38 years.

All cases were bilateral. Thirty one cases (57.5%) were >36 years, twenty two cases (40.7%) were in the >18-35 years age group and one case (1.8%) was in the 0-18 years age group.

Two patients had a complete presentation (3.7%), thirty an incomplete presentation (55.5%) and twenty two had a possible syndrome (40.7%).

Forty six (85. 1%) patients presented at acute uveitic stage and eight (14.8%) presented at chronic recurrent stage. Among patients presenting in acute uveitic stage,9(19.5%) were granulomatous and 37(80.5%)were non-granulomatous. Similarly, among those presenting in chronic recurrent stage,4(50%) were granulomatous and 4(50%)were non-granulomatous.

Posterior segment findings included exudative retinal detachment in 40(74%), disc edema in 33(61.1%) and sunset glow fundus in 3(5.5%).

The details of the extraocular findings are given in Table 1.

Table 1. Extraocular findings.

Extraocular findings	Number (percentage)
Headache	32(59.2%)
flu like symptoms	6(11.1%)
hearing loss	5(9.2%)
Tinnitus	4(7.4%)
Alopecia	1 (1.8%)
Vitiligo	1(1.8%)

Table 2. Pre- and post-treatment visual acuity grading of VKH patients according to WHO classification.

Visual acuity	Presenting (n=54)	Final(n=46)
6/6-6/12	21(38.8%)	34(73.9%)
<6/12-6/18	5(9.2%)	0
<6/18-6/60	8(14.8%)	7(15.2%)
<6/60-3/60	3(5.5%)	1(2.1%)
<3/60 -NPL	17(31.4%)	4(8.6%)

Eight patients lost follow up. So, in eight cases, the visual acuity of the final visit was not recorded in the chart.

All the cases were treated with systemic corticosteroid (prednisolone) at a dose of 1 mg/kg per day and then this dose was tapered slowly according to disease activity to 5 mg/day to control intraocular inflammation.

Thirtytwo (59.2%) cases had oral immunosuppressive therapy along with oral corticosteroid. One patient was non-responsive to Azathioprine and that patient was switched to tofacitinib. Dose of azathioprine (AZT) was 1-2 mg/kg per day, oral methotrexate (MTX) was 10-25 mg/week, tofacitinib was 10 mg per day and intravitreal methotrexate (MTX) was 400microgram/0.1ml.

Response to immunosuppressive treatment is tabulated in Table 3.

Table 3. Response of uveitis to immunosuppressive medication in VKH patients. (n=32)

Name of Drugs	Yes	No
Azathioprine	21(65.6%)	1(3.1%)
Methotrexate	9(28.1%)	0
Tofacitinib	1(3.1%)	0
Intravitreal methotrexate	1(3.1%)	0

DISCUSSION

VKH has been reported to predominate in female patients. In the current study 66.67%

of patients were female, which is consistent with the reports from many studies.[3,6,9-11] The mean age is 41.47±15.57 years and median age is 38 years in our study. Comparison of mean age to other studies is shown in table 4 below.

Table 4. Comparison of mean age to other studies.

Study	Mean age (years)	Region
Our study	41.47	Asia (Nepal)
Nakayama et al. (2019)	40.6	Asia (Japan)
Bykhovskaya et al. (2005)	33.0	West (USA)
Tugal-Tutkun et al. (2007)	32.8	Asia (Turkey)
Özdal et al. (2014)	37.8	Asia (Turkey)
Khairallah et al. (2007)	33.8	Africa (Tunisia)

In the current study the diagnosis was complete in 3.7%, incomplete in 55.5%, and probable in 40.7% of the patients. Similar to our rates, nine patients had a complete presentation (22%), 19 an incomplete presentation (46%) and 13 had a possible syndrome (32%).[7] Forty six (85. 1%) patients presented at acute uveitic stage and eight (14.8%) presented at chronic recurrent stage. J. F. Arevalo et al. reported 101 (65.6%) patients with acute VKH disease and 53 (34.4%) patients with chronic recurrent VKH disease.[8]

The most common extraocular finding in our patient population was headache (59.2%) followed by flu like symptoms (11.1%), dysacusia (9.2%), alopecia (1.8%) and vitiligo (1.8%). Headache was the most frequent extraocular finding both in our study and the studies by Tugal-Tutkun , Yang , Ozdal .[3,11,15]

In our study, posterior segment findings included exudative retinal detachment in 40(74%), disc edema in 33(61.1%) and sunset glow fundus in 3(5.5%) which was similar to study by F. Arevalo et al. where exudative retinal detachment occurred in 47.4%, disc edema in 33.1% and sunset glow appearance of the fundus was noted 19.4% .[8]

All 54 patients were initially treated with oral prednisone at a dose of 1 mg/kg per day and then this dose was tapered slowly according to disease activity. In the current study, additional therapy with immunosuppressive drugs was administered in thirty-two (59.2%) patients. The following table 5 shows the comparison of IMT usage with other studies.

Table 5. Comparison of immunosuppressive IMT usage with other studies.

Study	IMT Usage(%)	Comparison with our Study (59.2%)	Region
Our study	59.2	reference	Asia (Nepal)
Özdal et al. (2014)	58.6	Similar	Asia(Turkey)
Bykhovskaya et al. (2005)	71.0	Higher	West (USA)
Murthy et al. (2007)	45.7	Lower	Asia(India)
Mondkar et al. (2000)	50.0	Lower	Asia(India)

The most common immunomodulatory drug administered in our patients was azathioprine (AZT) (1–2 mg/kg per day) in 21(65.6%); followed by oral methotrexate (MTX) (10–25 mg/week) in 9(28.1%), tofacitinib in 1(3.1%)and intravitreal methotrexate (MTX) in 1(3.1%)patients. In all cases, corticosteroid therapy was tapered gradually to a maintenance dose of 5 mg/day to control intraocular inflammation. The reasons for not initiating immunomodulatory drugs in twenty two patients were either the presence of medical conditions contradicting their use or the patient's inability to adhere to timely follow ups for blood parameter monitoring.

Only one patient was non-responsive to Azathioprine and that patient was switched to tofacitinib which responded well.

At presentation, 21/54 (36.9%) cases had<6/60 vision and only 21/54 (38.8%) had >6/18 in the better seeing eye. In the final visit, only 5/46 (10.7%) had <6/60, whereas 34/46 (73.9%) had 6/18 or better in the better seeing eye. Final BCVA of 6/18 or better was achieved in 73.9% of the patients, which is consistent with several previous

researches.[3,11,12,13,16]

The diagnosis used in this study was according to revised diagnostic criteria for VKH disease (2001) which is old.

CONCLUSIONS

In summary, in Nepal, VKH associated uveitis affects predominantly young females. Bilateral panuveitis is the most common ocular manifestation. Oral prednisone is the first line of treatment in these patients. However, the addition of immunosuppressive agents during the acute phase of VKH disease may be useful for regulation of the immune reaction to melanocytes. However, VKH can be managed only with topical and oral steroid in cases where IMT is contraindicated due to the presence of medical conditions contradicting their use or the patient's inability to adhere to timely follow ups for blood parameter monitoring. A long-term prospective study is required to determine the efficacy of immunosuppressive agents in the early active phase of acute VKH disease.

CONFLICT OF INTEREST

The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the paper.

REFERENCES

1. Moorthy RS, Inomata H, Rao NA. Vogt-koyanagi-harada syndrome. Survey of ophthalmology. 1995 Jan 1;39(4):265-92. doi: https://doi.org/10.1016/S0039-6257(05)80105-5

2. Ohguro N, Sonoda KH, Takeuchi M, Matsumura M, Mochizuki M. The 2009 prospective multi-center epidemiologic survey of uveitis in Japan. Japanese journal of ophthalmology. 2012 Sep;56:432-5. doi: https://doi.org/10.1007/s10384-012-0158-z

3. Ozdal P, Ozdamar Y, Yazici A, Teke MY, Ozturk F. Vogt-Koyanagi-Harada disease: clinical and demographic characteristics of patients in a specialized eye hospital in Turkey. Ocular immunology and inflammation. 2014 Aug 1;22(4):277-86. doi: https://doi.org/10.3109/09273948.2013.856448

4. Agrawal A, Biswas J. Unilateral Vogt-Koyanagi-Harada disease: report of two cases. Middle East African journal of ophthalmology. 2011 Jan 1;18(1):82-4 doi: 10.4103/0974-9233.75898

5. Read RW, Holland GN, Rao NA, Tabbara KF, Ohno S, Arellanes-Garcia L, et al. Revised diagnostic criteria for Vogt-Koyanagi-Harada disease: report of an international committee on nomenclature. American journal of ophthalmology. 2001 May 1;131(5):647-52. doi: https://doi.org/10.1016/S0002-9394(01)00925-4

6. Nakayama M, Keino H, Watanabe T, Okada AA. Clinical features and visual outcomes of 111 patients with new-onset acute Vogt-Koyanagi-Harada disease treated with pulse intravenous corticosteroids. British Journal of Ophthalmology. 2019 Feb 1;103(2):274-8.doi: https://doi.org/10.1136/bjophthalmol-2017-311691

7. Diallo K, Revuz S, Clavel-Refregiers G, Sené T, Titah C, Gerfaud-Valentin M, et al. Vogt-Koyanagi-Harada disease: a retrospective and multicentric study of 41 patients. BMC ophthalmology. 2020 Dec;20:1-8 doi: https://doi.org/10.1186/s12886-020-01656-x

8. Arevalo JF, Lasave AF, Gupta V, Kozak I, Al Harbi MB, Al Rushood AA, et al. Clinical outcomes of patients with Vogt-Koyanagi-Harada disease over 12 years at a tertiary center. Ocular immunology and inflammation. 2016 Sep 2;24(5):521-9. doi: https://doi.org/10.3109/09273948.2015.1025984

9. Read RW, Rechodouni A, Butani N, Johnston R, LaBree LD, Smith RE, et al. Complications and prognostic factors in Vogt-Koyanagi-Harada disease. American journal of ophthalmology. 2001 May 1;131(5):599-606. doi: https://doi.org/10.1016/S0002-9394(01)00937-0

10. Bykhovskaya I, Thorne JE, Kempen JH, Dunn JP, Jabs DA. Vogt-Koyanagi-Harada disease: clinical outcomes. American journal of ophthalmology. 2005 Oct 1;140(4):674-e1. doi: https://doi.org/10.1016/j.ajo.2005.04.052

11. Tugal-Tutkun I, Ozyazgan Y, Akova YA, Sullu Y, Akyol N, Soylu M, et al. The spectrum of Vogt-Koyanagi-Harada disease in Turkey: VKH in turkey. International Ophthalmology. 2007 Jun;27:117-23. doi: https://doi.org/10.1007/s10792-006-9001-1

12. Murthy SI, Moreker MR, Sangwan VS, Khanna RC, Tejwani S. The spectrum of Vogt-Koyanagi-Harada disease in South India. International ophthalmology. 2007 Jun;27:131-6. doi: https://doi.org/10.1007/s10792-007-9046-9

13. Özdal MP, Yazici A, Tüfek M, Öztürk F. Epidemiology of uveitis in a referral hospital in Turkey. Turkish Journal of Medical Sciences. 2014;44(2):337-42. doi: 10.3906/sag-1302-132

14. Khairallah M, Zaouali S, Messaoud R, Chaabane S, Attia S, Ben Yahia S, et al. The spectrum of Vogt-Koyanagi-Harada disease in Tunisia, North Africa. International Ophthalmology. 2007 Jun;27:125-30. doi: https://doi.org/10.1007/s10792-006-9013-x

15. Yang P, Ren Y, Li B, Fang W, Meng Q, Kijlstra A. Clinical characteristics of Vogt-Koyanagi-Harada syndrome in Chinese patients. Ophthalmology. 2007 Mar 1;114(3):606-14. doi: https://doi.org/10.1016/j.ophtha.2006.07.040

16. Sukavatcharin S, Tsai JH, Rao NA. Vogt-Koyanagi-Harada disease in Hispanic patients. International ophthalmology. 2007 Jun;27:143-8. doi: https://doi.org/10.1007/s10792-006-9017-6

17. Mondkar SV, Biswas J, Ganesh SK. Analysis of 87 cases with Vogt-Koyanagi-Harada disease. Japanese journal of ophthalmology. 2000 May 1;44(3):296-301. doi: https://doi.org/10.1016/S0021-5155(00)00152-0

18. Paredes I, Ahmed M, Foster CS. Immunomodulatory therapy for Vogt-Koyanagi-Harada patients as first-line therapy. Ocular immunology and inflammation. 2006 Jan 1;14(2):87-90. doi: https://doi.org/10.1080/09273940500536766