EPIDEMIOLOGY AND PREVALENCE OF POSTERIOR UVEITIS IN SHIMLA HILLS

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ABSTRACT

Aim: To study the epidemiology and prevalence of posterior uveitis in Shimla Hills. Materials and Methods: It is a retrospective/prospective study of patients with retinal diseases attending the general ophthalmology clinic of a tertiary care facility at Shimla from August 2008 to April 2013. Out of 5600 subjects, 4323 were taken as a sample. The data were taken from the hospital records and thereafter analyzed to determine their age, sex distribution and diagnosis. All patients underwent visual acuity, refraction, slit lamp examination and fundus evaluation. The diagnosis was confirmed from fundus clinic records and evaluation of fundus photographic records retro-prospectively. The photographs were taken on the fundus camera (Kowa’s Fundus Camera VX-10) and fundus fluorescein angiography done wherever indicated. Results: Amongst the 196 (4.54%) subject of posterior uveitis, toxoplasmiasis (1.48%) was the commonest cause while acute multifocal placoid pigment epitheliopathy (0.02%) and multiple evanescent white dot syndrome (0.02%) was the least common disease. Conclusion: Retinal disorders appear to be a major public health problem in India. The present study shall help us in planning the management of such disorders in the hilly state of Himachal Pradesh to reduce the visual morbidity arising out of such disorders.

Keywords: Himachal Pradesh, retro-prospective, uveitis.

INTRODUCTION

Vitreoretinal diseases as a group are one of the more common ocular morbidities leading to blindness in the adult population, while being the most common cause of blindness worldwide in children. In the developing world, which harbors almost 90% of the world’s blind population, retinal diseases are among the leading cause of blindness after cataract.[5] Retinal disease has had a low priority in prevention of blindness programs in developing countries. Population-based surveys reported vitreoretinal disorders to be responsible for 8.56% and 12.7% in Iran and India respectively.[7]

Recently, there has been a significant increase in the burden of vitreoretinal disorders globally. In Nigeria, vitreoretinal disorders constitute a significant cause of ocular morbidity and vision loss with reported hospital prevalence rates ranging from 4.5% to 13.0%. Elsewhere in Ethiopia, a 12.5% hospital prevalence of vitreoretinal disorders was reported.[8] After the 1981 survey, there have been several population-based studies in Nepal that have reported the prevalence of blindness from retinal diseases within a range of 1-10.0%.[9]

The term "uveitis" includes a large group of intraocular inflammatory diseases of diverse etiology.[10] It affects people from all parts of the world, and it is a significant cause of severe visual impairment, accounting for 10% of blindness in the Western world.[11]

Ocular toxoplasmosis (TOXO) probably is the most prevalent form of infectious posterior uveitis in the world. TOXO is an endemic disease in most countries of the world, with large population involved especially young adult population.[12] There is a high incidence of cases of ocular TOXO in Quindio region (three new episodes by 100000 inhabitants by year).[13] TOXO is the most common retinal infection in the United States. During an outbreak of TOXO in British Columbia, of an estimated 2,900-7,700 infected persons, 19 were identified with symptomatic retinitis. Some areas of the world such as Southern Brazil have much higher rates of ocular TOXO.[14]

Serpiginous choroiditis (SC) has also been seen as an unusual presentation in patients with ocular sarcoidosis (OS).[15] The disease prevalence in Australia and New Zealand is 1 case per 1.5 million people.[16] Birdshot chorioretinopathy (BC) is well-known and strongly associated with human leukocyte antigen-A29.[17]

Sarcoidosis affects people of all racial and ethnic groups and can occur at all ages. In the United States, the majority of patients are Black with a prevalence of 40 per 100000, compared with 5 per 100000 among White Europeans. Prevalence of sarcoidosis among patients with uveitis in the West is <8-10%, in Japan 13%, and in India and Taiwan 4%, but virtually no patients with OS have been identified in mainland China.[18] Sarcoidosis is increasingly diagnosed in developing countries, although it was earlier thought to be uncommon.[19]

In south-east Asia, cytomegalovirus (CMV) retinitis is a neglected disease, with no defined strategy for management.[20] The incidence of CMV retinitis in India varied from 2 to 20% with the majority of patients receiving anti-retroviral therapy. CMV retinitis remains the most common cause for vision loss in AIDS patients globally.[21] Between November 2006 and July 2009, CMV retinitis was diagnosed in 211 of 891 (24%) new patients in Yangon Division.[22] The prevalence of CMV retinitis in hospitalized AIDS patients was 7.6% in this study.[23]

The incidence of acute retinal necrosis (ARN) is likely to rise, due to an increasing number of immunocompromised subjects and an ageing
population in many industrialized countries.[17] The minimum incidence of ARN in the UK is 0.63 cases per million.[18]

A recent study found that retinal disorders are an important cause of blindness in India. Nearly 80% of the considerable burden of blindness in India is attributed to curable causes, such as cataracts and refractive errors. It is estimated that there will be 244 million people (14.9% of the population) 65 years and older by 2050 compared with 42 million (4.5% of the population) in 1995.[19]

In this retro/prospective study of retinal diseases at a tertiary care facility of Shimla hills, we determined the prevalence of Posterior Uveitis among the patients who reported for photographic evaluation.

MATERIALS AND METHODS

Subject

The present study was conducted in a tertiary care facility of Shimla hills. A total of 5600 subjects from all districts of Himachal Pradesh (HP) visiting the fundus clinic of a tertiary care institute were evaluated during a period from August 2008 to April 2013. From these 5600 patients, 4323 subjects were taken as a sample. It is a retrospective and prospective study. We confirm adherence to the guidelines of the Declaration of Helsinki, as well as the hospitals Ethics Committee Approval.

Methods

In brief the present study involved 4323 subjects residing in HP (altitude ranging from 500 to 4500 m above sea level). HP is a hilly terrain and has a very distinct population that is composed of ethnolinguistic groups of tribals and socials. Most of the natives belong to Aryan origin while the people of Lahaul and Spiti district are essentially descendants of Mongols. Patients coming from all districts of HP underwent visual acuity refraction, slit lamp examination and pupil dilatation for detailed fundus evaluation. The diagnosis was confirmed from hospital records, fundus clinic records and evaluation of fundus photographic records retro-prospectively. Inclusion criteria included proper and complete records of the patient with clear fundus photographs and fundus fluorescein angiography (FFA) whereas exclusion criteria included fundus photographs/FFA taken on fundus camera not clearly visible for making a diagnosis and patients presenting with opaque ocular media.

In all the subjects, ophthalmological examination was performed. Visual acuity was measured by using Snellen’s chart, slit lamp biomicroscopy was done to assess the ocular adnexa and the anterior segment of eye using a slit lamp bio microscope (Haag Striet-900), Fundus examination was done by using the direct and indirect ophthalmoscope.

Fundus photographs were taken on the fundus camera (Kowa’s Fundus Camera VX-10, KOWA Company Ltd, 4-14, Nihonbashi-honcho 3-chome, Chuo-ku, Tokyo 103-8433 Japan). Fluorescein Angiography was performed wherever indicated.

Statistical analysis

Data collected were managed on an excel spreadsheet. Significance was determined by using percentage.

RESULTS

During the period from August 2008 to April 2013, 5600 patients visiting the fundus clinic of the tertiary care institution were evaluated. From these 5600 patients, 4323 subjects were taken as a sample for the study. Since the study was aimed to find out the pattern of posterior uveitis, other retinal disorders were not included. Table 1 shows that of the total 4323 cases studied, there were more males 2563 (59.28%) than females 1760 (40.72%) with fundus diseases.

Table 2 shows that there exists 196 (4.54%) subject of posterior uveitis out of which TOXO was present in 64 (1.48%), acute multifocal placoid pigment epitheliopathy (AMPPE) in 1 (0.02%), multiple evanescent white dot syndrome (MEWDS) in 1 (0.02%), SC in 24 (0.56%), idiopathic choroiditis (i.CHOR) in 63 (1.46%), BC in 3 (0.07%), multifocal choroiditis (MC) in 26 (0.60%), Tubercular (TB) in 2 (0.05%), OS in 4 (0.09%), CMV retinitis in 6 (0.14%), and acute retinal necrosis (ARN) in 2 (0.05%) subjects.

DISCUSSION

Although Himachal Pradesh is a hilly terrain consisting of 12 districts, the different districts having different types of geographic and socioeconomic conditions. There is a diversity of culture, language, customs, food habits, and way of life. Yet our study represents the patients residing in Himachal Pradesh. In the present study, more number of male patients with fundus diseases was seen as compared to females. These results are similar to the studies carried out by Eze et al., Karki et al, Teshome et al, Oluleye and Ajaiyeoba.[20][21][22][23][24][25]

Active OT was diagnosed in 2.8% of all uveitis, male (44.3%) and female (55.7%). Ocular TOXO is a highly recurrent disease, mainly unilateral, with an average age at onset lower than those observed in other types of uveitis.[26] Bilateral involvement was found in 35.7%.[27] Ocular TOXO was diagnosed in 8.4% patients with uveitis. Patients with ocular TOXO were more likely to be young, male as compared with patients in the entire uveitis cohort.[28] Ocular TOXO was more prevalent in female sex (60.0%) and young patients.[29] Age distribution, sex predominance, and unilateral/bilateral ocular involvement of TOXO were not taken in our study.

Anterior uveitis was the commonest form of all uveitic entities (57.4%) followed by diffuse uveitis (22.4%), posterior uveitis (10.6%), and intermediate uveitis (9.5%).[30] Anterior uveitis was most common (35.2%), followed by posterior uveitis (28.2%), panuveitis (21.2%), and intermediate uveitis (15.5%).[31] Anterior uveitis (45.6%) was the most common, followed by panuveitis (41.5%), posterior uveitis (6.8%), and intermediate uveitis (6.1%).[32] The anterior uveitis was seen in 49.23% followed by posterior uveitis (20.23%), intermediate uveitis (16.06%) and panuveitis (14.68%).[33] Our percentage of posterior uveitis (4.54%) was not similar to that reported in previous studies. Moreover, anterior, intermediate uveitis, and panuveitis were not included in our study.

Table 1: Gender distribution of cases

<table>
<thead>
<tr>
<th>Male/Female</th>
<th>Total</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>2563</td>
<td>59.28</td>
</tr>
<tr>
<td>Female</td>
<td>1760</td>
<td>40.72</td>
</tr>
<tr>
<td>Total</td>
<td>4323</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 2: Inflammation-posterior uveitis

<table>
<thead>
<tr>
<th>Disease</th>
<th>Total</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOXO</td>
<td>64</td>
<td>1.48</td>
</tr>
<tr>
<td>AMPPE</td>
<td>1</td>
<td>0.02</td>
</tr>
<tr>
<td>MEWDS</td>
<td>1</td>
<td>0.02</td>
</tr>
<tr>
<td>SC</td>
<td>24</td>
<td>0.56</td>
</tr>
<tr>
<td>i.CHOR</td>
<td>63</td>
<td>1.46</td>
</tr>
<tr>
<td>BC</td>
<td>3</td>
<td>0.07</td>
</tr>
<tr>
<td>MC</td>
<td>26</td>
<td>0.60</td>
</tr>
<tr>
<td>TB</td>
<td>2</td>
<td>0.05</td>
</tr>
<tr>
<td>OS</td>
<td>4</td>
<td>0.09</td>
</tr>
<tr>
<td>CMV retinitis</td>
<td>6</td>
<td>0.14</td>
</tr>
<tr>
<td>ARN</td>
<td>2</td>
<td>0.05</td>
</tr>
<tr>
<td>Total Inflammation: Posterior uveitis</td>
<td>196</td>
<td>4.54</td>
</tr>
</tbody>
</table>

In the posterior uveitis group, the most frequent diagnosis was TOXO (38.3%). TOXO (23.5%) was the most common posterior uveitis entity in all the patients irrespective of the age group. The most frequent intraocular inflammatory disease identified was ocular TOXO (1.1%). The findings of the present study were consistent with previous studies. Ocular TOXO and birdshot retinochoroidopathy are less common or absent in China. Whereas in our study, ocular TOXO was the most common and birdshot retinochoroidopathy the rare disease.

The SC (25.1%) was the most common specific diagnosis in posterior uveitis, followed by MC (20.7%). The most frequent diagnosis were TOXO (38.3%) and SC (5.3%). Serpiginous choroiditis and sarcoidosis predominated in elderly patients (8%). SC was the third most common form of posterior uveitits in our study.

In the posterior uveitis group, ocular TOXO was the most common (40.2%) followed by ICHOR (19.5%). SC (15.2%). TOXO was the most frequent cause in this study followed in order by idiopathic. Sarcoidosis and white dot syndromes were less common. Some causes such as TB was extremely rare. The findings of our study were similar to that reported in previous studies.

In the posterior uveitis group, a total of 29.87% were seen out of which APMPE (five cases), MC (four cases), TB (five cases), CMV retinitis (two cases), and ARN (one case) were seen. The most frequent intraocular inflammatory disease identified was acute retinal necrosis (1.3%).

In the present study, out of 45.54% of posterior uveitits, there were APMPE (1 case), MC (26 cases), TB (2 cases), CMV retinitis (6 cases) and ARN (2 cases). The difference between the two studies might me due to difference in the size of sample.

TB was seen in 8.95% of our posterior uveitis patients. Tuberculosis was the most common cause in children (10.4%) and in middle-aged patients (13.6%). In the present study, the percentage of posterior uveitis attributed to TB was 0.05% which was less than reported in the previous studies.

Four patients presented with a systemic disease related to the APMPE. Of the 12 cases, 6 cases carried the diagnosis of MEWDS (5 females and one male). Four cases were diagnosed with APMPE (one female and three males). In our study, one case of APMPE and MEWDS was reported.

At presentation, 75.82% eyes had exclusively active SC, 13.18% eyes had both active and healed lesions, and 10.98% eyes had only healed choroiditis lesions. In our study, SC was 0.56% and active/healed lesion were not included.

The most frequent intraocular inflammatory disease identified was sarcoidosis (13.3%). Ocular involvement was seen in 29 patients. Posterior uveitis was distinctly more common than anterior uveitis.

In our study, OS was 0.09% and only posterior uveitits involvement by sarcoidosis was taken.

CONCLUSION

Retinal disorders appear to be a major public health problem in India. The results of this study gave an insight into the prevalence of posterior uveitis. The present study shall help us in planning the management of such disorders in the hilly state of Himachal Pradesh to reduce the visual morbidity arising out of such disorders. This entails the necessity for accessible comprehensive eye care services, establishment of human resources, screening and awareness of the disease and affordable eye health policy.

REFERENCES


