Table 1

Lipid Class	Retinopathy (62)	Non Retinopathy (38)	T-Test	Degree of Freedom	Confidence Interval	p value
Cholesterol	172.36 ± 48.3	158.25 ± 31.5	1.134	48	95%	0.2625
TGL	147.5 ± 67.4	157.11 ± 51.7	0.5968	48	95%	0.553
LDL	136.30 ± 55.0	157.11 ± 27.06	2.91	48	95%	**0.0053**
VLDL	30.53 ± 15.31	27.26 ± 10.6	0.8172	48	95%	0.4179
HDL	2.74 ± 9.06	32.93 ± 14.70	2.0074	48	95%	**0.0498**

(*p < 0.05 Significant*)

correlation between the oral atorvastatin therapy and reduction of retinopathy, particularly CSME.[4] The drawbacks of the study were that 24 patients were hypertensives, 12 with essential hypertension and 12 developing it after onset of Diabetic Nephropathy. But 16 of these cases were well controlled hypertensives Also 14 patients were ethanolic out of which 3 were abstaining for past 5 years and 10 were smokers with 2 actively smoking which acted as compounding factors. Also Fundus Photography was done in other centres. However, the retinopathy grading was repeated independently by a single grader at our centre. To conclude ,the questions that arise from this study are as the lipid parameters in our diabetic population are lower compared to those outside our state, Should we consider lipid lowering in our diabetic patients to levels given by the ADA guidelines 2006?

Whether such lipid lowering will help in the reduction of microangiopathy in these patients. (as ADA guidelines are for prevention of macrovascular complications)?

Further studies are needed to evaluate these aspects.

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BEST PAPER OF RETINA VITREOUS-II SESSION

Retinoblastoma in Older Children

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(Presenting Author: Dr. Suryasnata Rath)

Retinoblastoma is the commonest primary ocular malignancy in children. Almost 90-95% of all patients with retinoblastoma are diagnosed before the age of 5 years[1,3]. The annual incidence of retinoblastoma in children aged five years and older has been reported as 0.6 per million as compared to 10.9 per million in 0 to 4 years age group[3]. Bilateral

retinoblastoma presents at an earlier age than does unilateral retinoblastoma. There are inconsistencies in the literature regarding survival of retinoblastoma in various age groups [3,4,6,7]. The clinical profile and prognosis is likely to be different in the children diagnosed with retinoblastoma aged 5 years or beyond. The purpose of this study was to describe the clinical profile and management of retinoblastoma in older children.

Materials and Methods

Retrospective review of all consecutive patients, diagnosed as retinoblastoma, presenting to the outpatient services of L.V. Prasad Eye Institute, Hyderabad, at or beyond 5 years of age, was performed. The period of review extended from 1st Jan 1990 upto 31st July 2005 and the following data was recorded and analysed.

Results

Of a total of 723 patients with retinoblastoma, 52(7.2%) patients presented at or beyond 5 years of age. The mean age at the time of presentation was 74.9 ± 23.3 (range 60 – 144) months. Out of 51 cases, 35(68.62%) were between 60-72 months of age. One child was finally diagnosed as medulloepithelioma and excluded from the study. Therefore 51 children with clinical and/or histopathological diagnosis of retinoblastoma who presented to us at or beyond 5 years of age were included in the study. Slight male preponderance with 30 male patients as compared to 21 female patients (M:F=1:1.4). 11(21.5%) patients had bilateral disease. All except one had sporadic disease. 3(5.8%) patients had undergone prior treatment for retinoblastoma before presentation. Invasive procedures done prior to presentation included evisceration in 2, hyphema drainage in 1, anterior chamber paracentesis in 1 and fine needle aspiration cytology in 1 patient. The most common symptom at presentation was a white pupillary reflex seen in 24(47%) patients followed by diminution of vision in 9(17.6%), pain in 5(9.8%), fungating growth in 4(7.8%), progressive protrusion of eyeball in 3(5.8%) patients. The median duration of symptoms was 1.5 (range 0-60) months before presentation.

The most common sign at presentation was leucocoria in 30(58.8%) patients followed by raised IOP in 27(52.9%) and neovascularization of iris in 23(45%) patients. Retinal detachment was seen in 15(29.4%), large fungating mass and exotropia in 6(11.7%) patients each. Atypical presentations included eyelid edema in 12(23.5%), tumour hypopyon in 10(19.6%), proptosis and an enlarged eyeball in 8(15.6%) each, vitreous hemorrhage in 6(11.7%), orbital cellulitis in 3(5.8%), spontaneous corneal perforation and cataract in 2(3.9%) patients each. The various stages of retinoblastoma presenting to us consisted of intraocular disease in 36(70.58%), retinoblastoma with extraocular extension in 4(7.84%), optic nerve extension in 5(9.8%), orbital retinoblastoma in 2(3.92%), and metastatic retinoblastoma in 3(5.88%). One child presented with retinoblastoma extension to the orbit and optic nerve. Primary management of retinoblastoma consisted of enucleation performed in 32(62.7%) patients, chemoreduction administered in 10(19.6%) patients, external beam radiation therapy in 2 patients of which one received additional paleative chemotherapy. 7 patients were lost to follow-up after their first visit. Local and systemic tumour control was achieved in 26(81.25%) patients after enucleation over a mean follow-up of 38.6 (range 0-124) months. Postenucleation orbital recurrence of retinoblastoma was seen in 2(6.45%) patients. Metastasis was seen in 5(16.1%) patients at a mean duration of 10.2 (range 6-18) months after enucleation. Chemoreduction was the primary modality of treatment in 10(19.6%) patients. All of them had orbital retinoblastoma. Overall systemic metastasis was seen in 8(15.6%) patients.

Discussion

Maghy et al published the first case of retinoblastoma in a 20 year old female[8]. Verhoeff et al[9] reported a case of histopathologically proven retinoblastoma in a 48 year old man. Recently Biswas et al [10] have published a small series of 3 patients, age ranging from 22 to 29 years, who underwent enucleation for retinoblastoma. Shields et al [2] reported the largest series of 34 children aged

5 years or more of which 26 patients had active retinoblastoma and the rest had characteristics of retinocytoma. As many as 11(21.5%) patients presented in our series had bilateral disease as compared to all unilateral cases in the series reported by Shields et al [3]. However in another cohort of retinoblastoma patients of 5 years and older reported recently by Karcioglu et al [13] there were 4 cases with bilateral disease out of a total of 18 patients reported. Only 1 child amongst the bilateral cases in our series had familial disease, all others were sporadic. Though the most common symptom was a white pupillary reflex in 24(47%) patients, diminution of vision was seen in 9(17.6%), pain in 5(9.8%) and progressive protruding mass in 3(5.8%) patients. These symptoms were unusual as compared to children of preverbal age with retinoblastoma. Binder et al [14] have described the unusual manifestations of retinoblastoma where they have noted a tendency in older children towards unusual manifestations. Abnormal slow growth of the tumour has been opined to be one explanation for this tendency. Atypical presentations in our study included neovascularization of iris in 23(45%) patients, retinal detachment in 15(29.4%), eyelid edema in 12(23.5%), tumour hypopyon in 10(19.6%), proptosis and enlarged eyeball in 8(15.6%) each, vitreous hemorrhage and large fungating mass in 6(11.7%) each, orbital cellulitis in 3(5.8%), spontaneous corneal perforation and cataract in 2(3.9%) patients each. Contrary to the observations of Karcioglu et al [13] where orbital cellulitis was described as an infrequent presenting feature in retinoblastoma in older age group, as many as 3(5.8%) children presented with clinical picture simulating orbital cellulitis in our series. Awareness of these unusual presentations and a high index of suspicion are essential prerequisites to early diagnosis of retinoblastoma. Considering the diverse modes of presentation, there have been recommendations to keep retinoblastoma as a differential diagnosis in all ocular inflammations of childhood.[14] At our own institute a child presenting at 18 months of age with an enlarged eyeball and raised IOP was treated for glaucoma for 44 months before undergoing evisceration for cosmesis. Histopathology of eviscerated specimen revealed retinoblastoma. The child underwent chemoreduction followed by lid sparing orbital exenteration and was alive and well as seen on last visit 4 months post exenteration.

Tumour seeding along the needle tracts of biopsy needles and vitrectomy instruments is well documented.[13,15,16] In our series 5 patients had undergone an invasive procedure (2 Evisceration, 1 FNAC, 1 Hyphema drainage and 1 Aqueous tap) before being diagnosed. All 5 children in this cohort with prior invasive interventions have a short follow-up of less than a year. In these children the long term adverse effects on local and systemic disease control remain to be seen. Retinoblastoma with extraocular extension was seen in 13(25.4%) patients indicative of advanced disease at presentation in this subgroup of older children. Two patients had developed distant metastasis at presentation. Delayed diagnosis was most probably the reason for the advanced form of disease seen in older children with retinoblastoma. Most children (62.7%) underwent enucleation as the primary therapeutic modality with local and systemic disease control achieved in 26(81.2%) patients. Five children developed distant metastasis of retinoblastoma following enucleation. One patient had massive choroidal invasion by tumour cells which had not been commented upon. He presented with development of liver and lung metastasis after 10 months of enucleation. Another two patients showed invasion of optic nerve upto transection on histopathological examination for which they received adjuvant treatment. They developed CNS metastasis after a mean interval of 14 months postenucleation. Overall systemic metastasis was seen in 8(15.6%) patients. This is higher than that seen in retinoblastoma involving all age groups reported as less than 10% [11]. The higher percentage of metastatic retinoblastoma was probably because of the advanced stage of the disease at presentation as explained by Kopelman et al [12]. Our series suffers from the disadvantages of a retrospective analysis.

However considering the rarity of retinoblastoma in older children, this is to the best of our knowledge the largest series discussing the clinical manifestations and management issues of retinoblastoma in older children. Older children with retinoblastoma may present with atypical manifestations. They have advanced disease at presentation, mostly needing primary enucleation. A significant proportion of patients have orbital infiltration and carry relatively poor systemic prognosis.

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BEST PAPER OF RETINA VITREOUS-III SESSION

Intravitreal Bevacizumab (Avastin) for Neovascular Age-related Macular Degeneration (AMD)

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VEGF (vascular endothelial growth factor), a heparin-binding glycoprotein discovered in 1983[1-4] has been identified as a significant player in the angiogenic cascade that promotes the growth of blood vessels. It initiates blood vessel growth to increase oxygenation to blood-deprived tissue, such as post-myocardial infarction; however on the other hand angiogenesis has been implicated in the pathogenesis of a variety of disorders: