
CASE REPORT

New Arsenal for Infantile Haemangioma

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SUMMARY

The therapeutic arsenal for infantile haemangioma can now be considered to include B- blockers mainly atenolol. These drugs are thought to act as vasoconstrictors, regulating angiogenic pathways & inducing apoptosis of vascular endothelial cells. Although B blockers are not approved indication for infantile haemangioma, many clinics in world are using it before resorting to corticosteroids. In all cases cardiologist should asses the patient before start of the therapy and follow up should be scheduled.

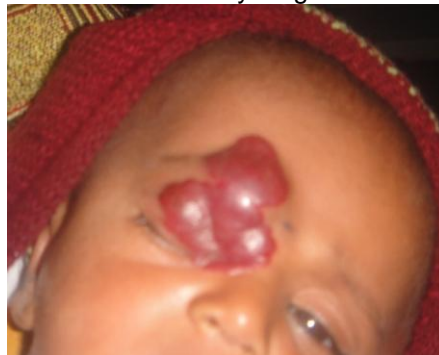
CASE REPORT

A baby of two month of age was examined in outpatient department of Eye Infirmary Khanpur with complaint of baby do not open his Rt. eye. On examination there was large reddish mass about 3x3 mm at upper lid involving the medial half of the eye brow. Due to its weight, baby was unable to open his eye. Eye was normal in size. Conjunctiva as well as cornea was normal. Anterior chamber was normal. Other eye was normal. Informed consent was taken from parents for initiation of the therapy. Atenolol 0.5 mg/ kg per day for 7 days thereafter 1 mg per kg per day was started. Along with oral atenolol ,Timolol maleate eye drop was massaged on the lesion. Before initiation of treatment complete cardiac assessment was done by cardiologist. During treatment baby was checked regularly by cardiologist for side effect of atenolol. After one month lesion started regression in size & patient was able to open his eye. Follow up of further 6 month showed further regression of the haemangioma.

DISCUSSION

Infantile haemangioma effect approximately 5% to 10 % population white children^{1, 2,3} .Haemangioma of infancy is a benign vascular tumor that develop in three phases: the tumor proliferate ,the second phase is rest phase & the third phase is involution. Most of the infantile haemangioma undergo spontaneous resolution with only a small proportion need intervention. The unanimous opinion is that these haemangioma should be treated in proliferative phase under following condition: vision is affected or might be, visceral involvement may become life threatening, rapid growth leads to anatomical

distortion that may resolve partially & leave squeal, an air way affected & tumor is causing congestive cardiac failure^{4,5}. Although wait & see approach to uncomplicated infantile haemangioma persist an interest in more active management has begun to emerge. The passive attitude might be justified by the benign nature of these tumors & their tendency to resolve spontaneously but still many patients needs intervention at the end of the period of involution if the tumor has not completely disappeared. The difficulty of predicting how long involution will take & how complete it will be justifies taking a more active approach to starting a more active approach to starting treatment at an early stage⁶.



Before treatment



After treatment of 6 months

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Oral corticosteroids have been the drug of choice for the treatment for treating complicated haemangiomas of infancy to date but oral beta blocker like Atenolol which lead to better overall outcome with fewer side effects will probably overcome in near future. Beta blocker antagonizes the beta adrenergic pathway, blocking receptors in such organs as the heart, the pancreas, the liver as well as peripheral blood vessels & bronchi. Therapeutic effect of atenolol on infantile haemangioma is vasoconstriction; decreased expression of vascular endothelial growth factor & basic fibroblast growth factor (bFGF) gene through down regulation of RFA/mitogen-activated protean kinase pathway & apoptosis of capillary endothelial cells⁷.

There are two types of beta blocker: lipophilic like propranolol which appear in high concentration in brain tissue that hydrophilic like Atenolol which appear in low concentration in brain tissue. This is reason hydrophilic atenolol is related with fewer side effects like nightmares & hallucination than lipophilic beta blockers like propranolol⁸. Topical timolol solution is a nonselective B – adrenergic receptor inhibitor that was approved in 1978 for the treatment of glaucoma & has been safely used as first line therapy for paediatric glaucoma for >30 years⁹. A number of case reports & case series have observed the efficacy of Timolol maleate for the treatment of infantile haemangioma, however, concern has been raised regarding its safety¹⁰. Infantile haemangioma cessation occurring as early as 48 hours after commencement of B-blocker has been described previously¹¹. This is relatively rapid onset of action for systemic therapy most likely encourage compliance. In comparison, topical maleate gel has been associated with growth arrest & a slower reduction in redness & thickness within first two to four weeks of use as seen in 2 noncontrolled studies of the use of topical timolol maleate for infantile haemangioma¹². Everolimus is an orally active immunosuppressant analogue of sirolimus, a macrolide antibiotic produced by *Streptomyces hygroscopicus*. These are also known as mammalian target of Rapamycin (mTOR) inhibitors. This is currently licensed in EU for treatment of angiomyolipoma. The cost of the drug is high as 75 pounds per 5mg tablet.

In this case we initiated aggressive approach with atenolol orally along with topical timolol maleate (eye drops) to prevent amblyopia. The haemangioma showed better response it started regression within two months & baby was able to open his eye. The time of intervention was ideal for the baby of 2 month age as during the rapid proliferation phase (age 1-6 months) may result in faster resolution.

CONCLUSION

B blocker like Atenolol along with topical timolol maleate is an alternate way of treatment as compared to intraleisional injection & surgery. This will probably become the treatment of choice for Haemangioma of infancy in near future, but many points remain to be discussed. The optimal dose regimen, the type of monitoring during treatment, among other concern, must still be studied.

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