Infantile hemangiomas are common benign tumors of infancy affecting up to 10% of children. They are typically not present at birth but undergo a rapid proliferation stage and then plateau in growth before resolving spontaneously. Recently, beta-blockers have been favoured over systemic corticosteroids for treatment of disfiguring or life-threatening infantile hemangiomas. We present a case of an 11-week-old female with a 7 week history of an evolving hemangioma along a facial V2 distribution. Physical exam revealed a well-defined bright red plaque over the right zygoma and lower eyelid. MRI, echocardiograph, and liver ultrasound were normal. Patient was treated with nadolol and had a rapid and substantial regression of the hemangioma. Nadolol is an effective treatment option for disfiguring facial infantile hemangioma. The use of beta-blockers as treatment offers clues into the pathogenesis of infantile hemangioma, which is not yet completely understood.

**Keywords:** Beta-Blockers, hemangioma, pediatric

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**Case Report**

An 11-week-old healthy baby girl presented to the dermatologist with a well-defined red plaque over the right zygoma and lower eyelid. MRI, echocardiogram, and liver ultrasound were normal. Patient was treated with nadolol and had a rapid and substantial regression of the hemangioma. Nadolol is an effective treatment option for disfiguring facial infantile hemangioma. The use of beta-blockers as treatment offers clues into the pathogenesis of infantile hemangioma, which is not yet completely understood.

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Quick Response Code:

Website: www.jfmpc.com

DOI: 10.4103/2249-4863.152272

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0.5 mg per kg each week until the 4th week where a maintenance dose of 2 mg per kg was reached. Pulse, blood pressure and glucose were monitored while the dose was titrated upward. The parents reported no side effects from nadolol. Within 3 weeks there was marked decrease in the redness, vascularity, and elevation of the hemangioma, including over the lower eyelid [Figure 1]. Ongoing improvement in the appearance of the hemangioma on nadolol was noted at age 22 weeks, with a plan to continue therapy until age 1 and then titrate slowly off the medication.

**Discussion**

Many recent studies have shown propranolol to be highly effective in treating high-risk or disfiguring IH.[4] Potential advantages of nadolol over propranolol include its inability to cross the blood–brain barrier, which may lead to decreased sleep disturbance and irritability, and a longer half-life with dosing twice a day. A small cohort-blinded study showed that nadolol might be somewhat more effective as a treatment for IH than propranolol.[5] Typically, few side effects are reported in patients receiving beta-blockers for IH. Blood pressure, heart rate, and serum glucose should be monitored in infants receiving beta-blockers. Sweating, shakiness, tachycardia, hypotonia, and hunger are early signs of hypoglycemia in infants.[8] Asthma is a contraindication for beta-blocker treatment.[3]

Beta-blockers are theorized to have several potential mechanisms of action on IH. Beta-blockers produce an immediate vasoconstrictive effect due to inhibition of adrenaline-mediated vasodilation.[1] This leads to decreased erythema and softening of the hemangioma within a few treatments. During the proliferative stage of IH, beta-blockers are thought to decrease the expression of vascular endothelial growth factor (VEGF), thereby opposing aberrant angiogenesis.[7] Beta-blockers have been also theorized to decrease inhibition of apoptotic pathways in IH, which may hasten tumor involution.[7]

**Acknowledgement**

Dr. Laura Finlayson, MD Dr. Doug Keeling, MD.

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