

COMMENTARY

Management of Infantile Hemangiomas

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Infantile hemangiomas (IH) are common vascular tumors that represent a significant treatment challenge for physicians and families. In this issue, Sethuraman and colleagues review current management options for affected pediatric patients.^[1] Fortunately, parents of children affected by uncomplicated IH may be reassured by the natural course of spontaneous involution. As

the authors correctly describe, the first step in IH management is careful assessment and monitoring to identify the subset of IH that are at risk for complications, such as impingement on important or vital structures, impairment of normal development, association with multi-system syndromes, visceral involvement, effects on cardiac or metabolic function, disfigurement, or poor cosmetic outcomes.^[2] Once the decision for treatment is made, a medical evaluation and identification of the depth of IH allows one to select an appropriate treatment or combination of treatments. Early treatment significantly improves outcomes in high-risk IH and may be initiated at the first appearance of IH.^[2] Because IH are dynamic lesions which may at various points have a deep component, superficial component, ulceration,

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obstruction of adjacent structures, or in the final stage, cosmetically bothersome telangiectasias or fibrofatty residuum, the treatment modalities and doses or settings utilized must periodically be reconsidered and modified as the IH changes and based on its response.

As the authors rightly conclude, oral propranolol has become a standard management option for deep or complicated IH, and has gained favor over the previously common treatment with systemic corticosteroids. Recently, the United States Food and Drug Administration granted approval for the treatment of IH using oral propranolol. Adverse effects, while they appear to be uncommon when patients are appropriately screened and monitored, include hypoglycemia, bronchospasm, risk of stroke in PHACES syndrome, and cardiac concerns.^[3] As our group has discussed, the child's caregiver(s) must be educated in and be diligent about giving the precisely-measured weight-based dose and guard against double-dosing mistakes.^[2] For IH with both superficial and deep components, combination treatment using propranolol and pulsed dye laser (PDL) has been shown to improve overall clearance and may allow for reduced cumulative doses of propranolol.^[2]

In superficial IH, PDL remains the most studied and effective treatment option. While the authors note PDL is used for ulcerated IH and for post-involution telangiectasia, PDL is additionally regularly used for early treatment of superficial IH from onset throughout the growth phase. PDL demonstrates excellent results and a well-established safety profile. Melanin is also targeted by PDL wavelengths; increased caution, including longer pulse durations, should be applied in darker skin types. Settings and appropriate candidates are well-described in the literature. Treatment using Nd:YAG laser may be considered, though the safety of Nd:YAG is less reliable.^[4] Experts agree that topical

or local anti-angiogenic drugs, such as topical timolol and imiquimod, are also an excellent alternative to non-intervention in superficial IH, and with laser-assisted drug delivery techniques, are being explored as an option for deep IH.^[5] To treat fibrofatty residuum after involution of IH, ablative fractional resurfacing represents an effective non-surgical option.^[6]

As awareness and recognition of infantile hemangioma risks and treatment options continues to grow, optimal management using early, and appropriately selected traditional or emerging therapies will allow us to provide superior outcomes for our young patients and their families.

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