



## Twenty years' experience of steroids in infantile hemangioma—a developing country's perspective

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Hemangioma;  
Systemic steroids;  
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Therapy

### Abstract

**Background:** Hemangioma is a common vascular tumor. Though it involutes spontaneously, results are unpredictable. Steroid therapy is an effective mode of its regression. We present our experience of largest series and possible recommendations for treatment.

**Materials and methods:** A total of 2398 patients were treated during the study period of 20 years. They were given oral prednisolone, intralesional triamcinolone, or combination of both as per the protocol and followed for the response. Response to the treatment was graded as excellent, good, poor, or no response.

**Results:** The male-to-female ratio was 1:2.3. In 81% of patients, hemangioma was noticed within first month of life. The commonest site of involvement was head and neck (57%). The commonest clinical presentation was discoloration and swelling. Mean age and size were  $8.43 \pm 7.04$  months and  $23.64 \pm 20.13$  cm<sup>2</sup>. Response rate was highest for superficial type using any modality of treatment. Patients younger than 1 year showed better response (90.3%) in comparison with children older than 1 year (80.8%). The specific complications occurring were infections in 249 (12.4%), cushingoid facies and growth delay in 62 (3.1%), and hypertension in 51 (2.5%) patients.

**Conclusion:** Steroid therapy either oral or intralesional as per the requirement is an easy and safe modality. Results are good to satisfactory in most patients. The complications are minimal. If treatment is needed, it should be used as a first-line therapy, especially when cost is an important concern.

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Hemangioma is a benign vascular tumor exhibiting cellular proliferation [1]. The usual tendency is to involute, but intervention is needed in up to 20% of cases [2]. There have been various studies suggesting beneficial effects of steroids

on hemangioma including our series [3]; however, the number of patients and follow-up years in most of them is limited.

We present our experience with the use of steroids in cutaneous hemangioma, which includes comparative study of various therapeutic modalities. Special emphasis is given to the need of treatment, route of administration, and possible guidelines for the treatment protocol in a developing country's perspective.

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## 1. Materials and methods

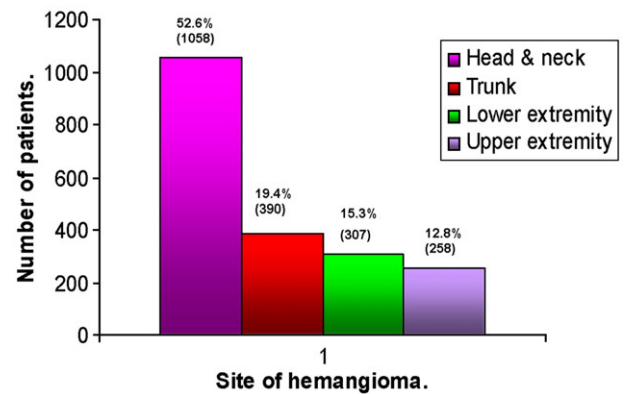
All patients of cutaneous hemangioma attending the hemangioma clinic from March 1986 to March 2006 were included in the study. The patients of our previous series [3] were also included in the present study for better statistical analysis. The diagnosis was clinical. All patients were seen by one senior consultant (ANG), having an experience of 30 years in treating hemangioma.

In patients having hemangioma of size less than 25 cm<sup>2</sup>, intralesional (I/L) triamcinolone (40 mg/mL) was injected using a 24-gauge needle at monthly interval (3-6 injections). The dose of Triamcinolone was 1 to 2 mg/kg (group 1). It was given evenly into the lesion through the healthy surrounding skin. If no response occurred after 6 injections, oral prednisolone in dose of 1 to 2 mg/kg on alternate day was added to the treatment along with 3 more injections at monthly interval (group 2). The total number of injections in group 2 did not exceed 9. The oral steroid prednisolone was given in low dose (1-2 mg/kg) on alternate day to patients having hemangioma size of more than 25 cm<sup>2</sup>, multiple hemangiomas of size more than 25 cm<sup>2</sup>, or extensive hemangioma (group 3). Each group had 3 clinical types of hemangioma, namely, superficial, deep, and mixed (Fig. 1).

## 2. Patient management protocol

### 2.1. Initial visit

Personal details included age, sex, locality, site, size, and numbers of lesions. Height, weight, and blood pressure were recorded at first visit.



**Fig. 2** The proportion of different type of hemangiomas in various groups. The percentage is of the total number of patients.

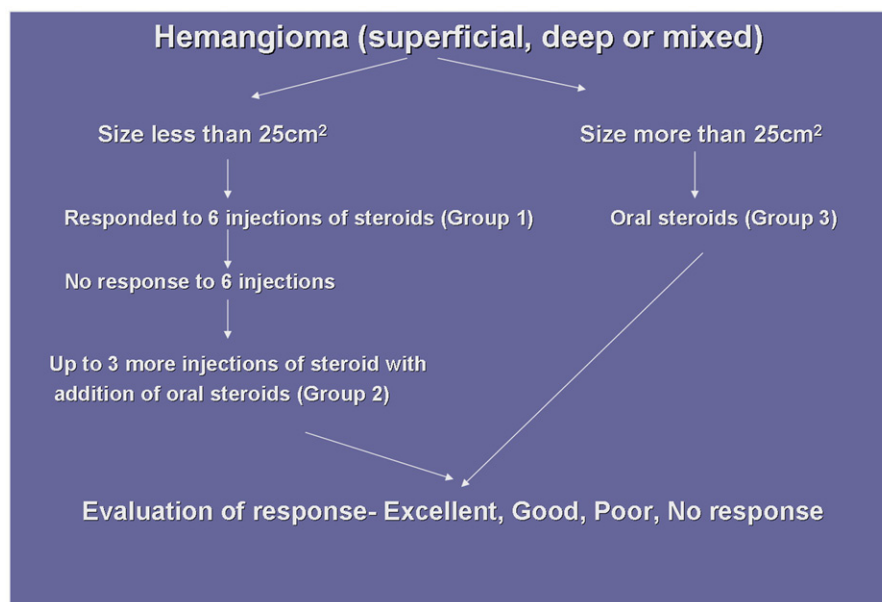
### 2.2. Subsequent visits

It included response to the treatment and related complications. Height and weight were compared as per the Centers for Disease Control and Prevention growth charts (United States, <http://www.cdc.gov>). The blood pressure was checked according to the National High Blood Pressure Education Program Working Group [4].

Tapering of dose was done only for the oral steroids in the last month of the course. For tapering, steroid was given twice a week for 1 week and then once a week. After that, it was stopped.

In each group, response to the treatment was evaluated as follows (Fig. 1):

1. Excellent—more than 75% regression without any significant scarring.



**Fig. 1** Flowchart showing arrangement of hemangiomas into different groups.

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