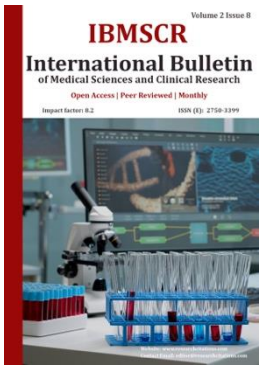


# EARLY DRUG THERAPY FOR FACIAL INFANTILE HEMANGIOMAS: A COMPARATIVE ANALYSIS

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**Abstract**

**Background:** Infantile hemangioma (IH) is a common benign vascular tumor in children. Although propranolol has proven to be effective in the conservative treatment of infantile hemangiomas, it has several disadvantages, such as the fact that it is given in the form of tablets, it is given in large doses, and it is difficult to dose. In clinical practice, propranolol dosages should be increased from 1 mg/kg per day to 2-4 mg/kg per day. Our research investigation seeks to evaluate the effectiveness of medical therapies in infants and young children who are breastfed under one year of age.

**Methods:** We retrospectively analyzed the data of 65 patients with facial infantile hemangioma who were treated at "NG medical", "Davo medical" and "Turon medical" clinics of Namangan region from September 2022 to May 2024. Thirty-one patients were diagnosed when they were less than 1 year old and started medical treatment, while 34 patients started treatment after 1 year old. The treatment results of the patients were evaluated by dopplerography and photographic analysis before and after the treatment.

**Results:** The treatment plan was prolonged for a maximum of six months, with a minimum of two months of treatment, when dynamics showed progress. Ninety percent of surgeries were done as outpatients, while just ten percent of treatments were given at a day hospital. Dopplerography is done once a month to evaluate the impact of medication therapy by analyzing changes in the derivative's size and blood flow velocity. In mixed HA, the values were 18.7± 2.2 cm/sec before treatment and 2.1± 0.1 cm/sec after treatment ($R < 0.05$); prior to the initiation of therapy, venous blood flow measured 8.6±1.1 cm/sec; after treatment, it was 1.0±0.1 cm/sec ($R < 0.05$).

**Conclusions:** In patients, who started medical treatment early, the effectiveness of treatment increased and the time spent on treatment was reduced.

**Keywords:** hemangioma, propranolol, infantile, facial, children, breastfed, dopplerography, beta-blocker.

## Introduction

Hemangioma is a benign blood vessel tumor that generally appears as a red spot in the first three weeks of a child's life and is characterized by fast growth and invasion into surrounding tissues [1, 5, 7, 11, 19, 28, 30, 32, 34]. Hemangiomas alter the color, consistency, and form of tissues throughout the growth phase, which can lead to a number of

consequences, including impairments in organ function and appearance [2, 4, 6, 9, 25, 27, 31, 33]. Skin-based hemangiomas can present with bleeding, subsequent infections, and suppuration. Its overall incidence in neonates is 10–15%, with the head and neck region accounting for 70% of cases. In males and girls, it is seen 3.5 times more frequently. Face-related HAs can lead to issues like dysmorphophobia, cosmetic deformities, and social isolation [1, 4, 6, 7, 9, 10, 11, 14, 22, 24, 27, 29].

According to shape, nature, histological structure, complications, and other features, there are currently over 20 different classifications of hemangiomas in the world [2, 5, 8, 9, 12]. Certain ones, such as Kondrashin's (1963) simplified classification of hemangiomas, are still in use in certain clinics' clinical practices [3, 5, 9, 11, 13, 23, 24, 26, 28, 30, 31, 32, 33, 34].

- Simple capillary hemangioma
- Simple hypertrophic hemangioma
- Cavernous hemangioma
- Mixed hemangioma
- Systemic hemangiomatosis

Purpose of the study. Improving the results of treatment of patients with facial hemangioma during breastfeeding.

**Material and metods**

In the Namangan region, scientific research was conducted in the private clinics "Turon Tibbiyot," "Davo," and "Medical Clinical Center NG" from September 2022 to May 2024. Propranolol has been used in scientific research to treat hemangiomas that develop on the skin of the face during breastfeeding.

The study examined 65 breastfeeding patients; all of them received medicinal treatment tactics depending on the stage of development of facial skin hemangioma. The patients' ages varied from 40 days to 2 years. Of the patients, 23.1% were males and 76.9% were girls (Table 1).

Table 1

**Distribution of patients with face hemangioma during breastfeeding by age and gender.**

| Age group | boy | girl | general | Frequency (%) |
|---|---|---|---|---|
| 0–12 months | 7 | 24 | 31 | 6,6±4.9* |
| 12–24 months | 8 | 26 | 34 | 21,7±3,9* |
| **Total** | **15 (23,1)** | **50 (76,9)** | **65 (100)** | **100** |

* R < 0.05 compared with the comparison group.

Table 2

**Patients face hemangioma locations**

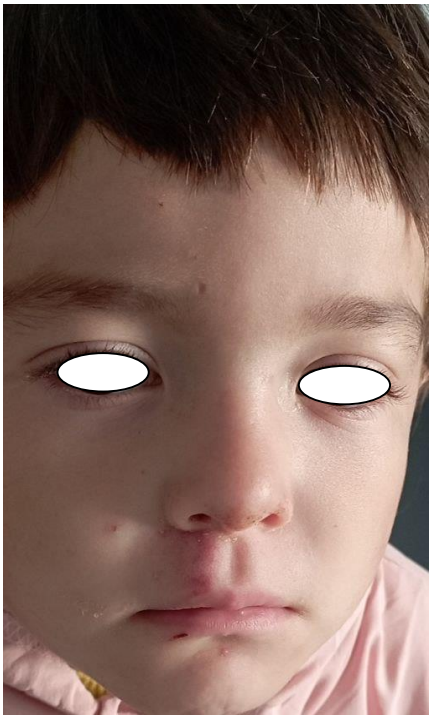
| Location | Number | % |
|---|---|---|
| Frontal area | 13 | 20,0±3,4 |
| Eye area | 7 | 10,8±5,1 |
| Nose area | 5 | 7,7±4,4* |
| Under eye area | 4 | 6,1±3,2 |
| Oral region | 12 | 18,5±1,7 |
| Chin area | 2 | 3,1±1,7 |
| Buccal area | 4 | 6,1±3,2 |
| Cheek area | 2 | 3,1±1,7 |

| | | |
|---|---|---|
| Auricular region | 5 | 7,7±1,7 |
| Several places | 11 | 16,9±1,7 |
| General | **65** | **100,0** |

All of the 65 individuals with HA on their faces was given a β-blocker, propranolol. The child's age and weight serve as the primary criteria for the prescription of medication therapy, which is administered in doses of 1-2 mg/kg under the supervision of a pediatrician and management of the patient's heart rate and ABP following an examination.

before treatment

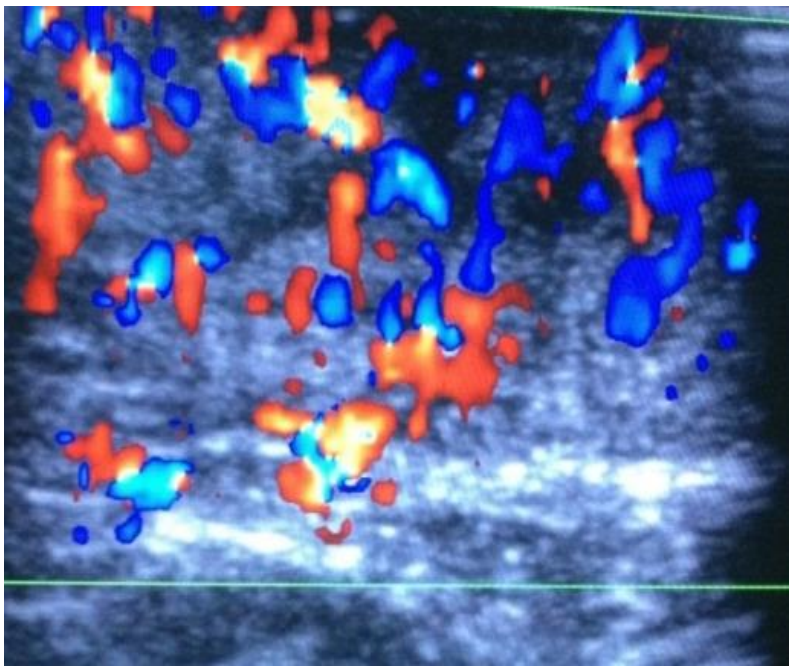
three months following propranolol medication



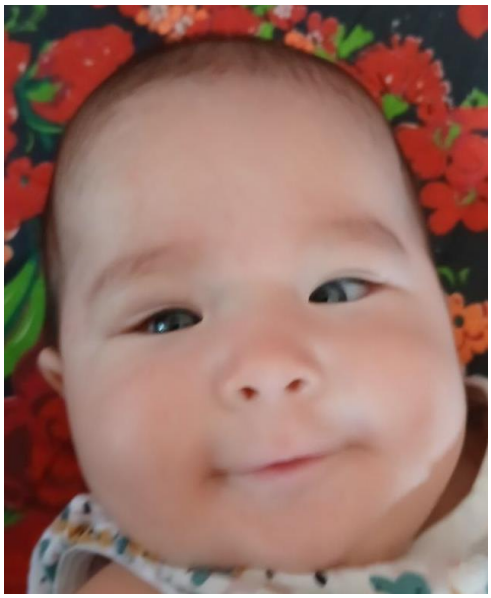
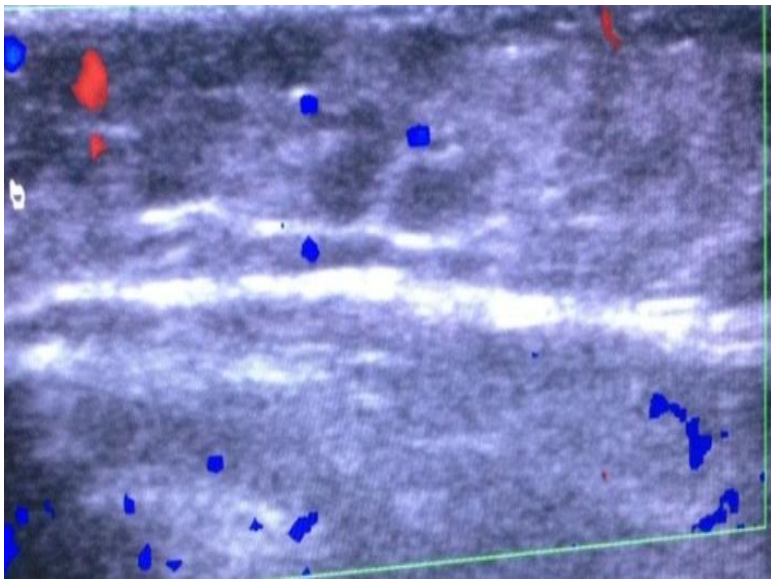
ten months following propranolol medication

Before starting treatment procedures using Dopplerography, parameters such as the size of the HA, the type of blood flow in the HA (arterial, venous, capillary, mixed) and blood flow velocity were determined in all patients.

After seeing improvement in dynamics, the treatment plan was extended for a maximum of six months, with a minimum of two months of treatment. Monitoring the patient's cardiovascular activity is important both before and during treatment; techniques such as electrocardiography, heart rate monitoring, blood pressure monitoring, and echocardiogram were used. A cardiologist should be in charge of overseeing sick kids. 10% of treatments were administered at a day hospital, while 90% of procedures were performed as outpatients.

Patient O. She is 3 months old. Before drug treatment and dopplerography picture.

Patient O. She is 6 months old. 3 months after drug treatment and dopplerography picture.

Table 3

**Propranolol therapy results for patients with face skin hemangiomas**

| **Result** | **Up to 12 months** | **In 12 months** | **Total** |
|---|---|---|---|
| Good | 15 (48,4%) | 10 (29,4%) | **25** (38,5%) |
| Satisfactorily | 13 (41,9%) | 9 (26,5%) | **22** (33,8%) |
| Unsatisfactorily | 3 (9,7%) | 15 (44,1%) | **18** (27,7%) |
| **Total** | **31** (100%) | **34** (100%) | **65** (100%) |

The clinical efficacy of HA treatment was evaluated by contrasting the visual (photographic) and dopplerographic findings with the final results of the before assessment.

Once a month, dopplerography is used to assess the effects of drug therapy based on variations in the speed of blood flow and the size of the derivative. Before starting therapy, venous blood flow measured 8.6±1.1 cm/sec; following treatment, it was 1.0±0.1 cm/sec (R <0.05); in mixed HA, the values were 18.7± 2.2 cm/sec before treatment and 2.1± 0.1 cm/sec after treatment (R < 0.05).

**Conclusion:** Starting medication early improves the efficacy and outcomes of treatment for patients with face hemangiomas. A color Doppler ultrasound study can determine the amount of HA present, as well as the kind (venous, arterial, and mixed) and velocity of blood flow. For HA therapy predictions, efficacy assessment, and therapeutic strategy selection, these details are essential. Furthermore, repeat ultrasound exams support treatment methods by monitoring changes in the previously described HA indicators during Doppler ultrasonography.

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