

Results of Drug Treatment of Hemangiomas of the Scalp in Children and Infants

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Annotation: The article describes the history, clinical picture, distribution, modern diagnosis, stages of development, classification and modern methods of treatment of hemangioma of the scalp in young children, as well as the results of drug treatment. The study analyzed the results of treatment of 72 patients with hemangioma during breastfeeding, who were treated on an outpatient basis in 2020-2024.

Keywords: Hemangioma, breastfeeding period, propranolol, hemangioma of the scalp.

Introduction: Hemangioma (HA) is a benign tumor that develops from blood vessels, observed mainly in the first 18 months of a child's life, characterized by rapid growth and invasion into surrounding tissues. During the growth period, hemangioma changes the color, consistency and shape of tissues, which leads to various complications in the form of cosmetic defects and functional disorders of organs. HAs located in the hairy area of the skin may be accompanied by complications such as suppuration, secondary infection and bleeding from HAs. The overall incidence of HA in newborns is 10-15%, of which 70% are observed in the head and neck area. 78% and 22% are observed in girls and boys, respectively. 83% of HAs located in the head region cause dysmorphophobia [4, 7, 9, 10, 12].

Cutaneous hemangiomas during their development in 80% of cases at birth appear as a pink or bluish spot. During this period, it is often confused with a mole or postpartum cyst. Subsequently, during the first 2-3 weeks after birth, the skin spot thickens and the size of the hemangioma increases. A high level of HA growth is observed after 4 weeks and manifests itself in the form of a red spot rising above the skin level [2, 7, 8, 11]. HA growth develops in 5 stages: prodromal, initiation, proliferation, maturation and involution [3, 5, 10]. Self-absorption of 15-20% of HA located on the skin is observed.

Despite the fact that a number of international scientific studies related to hemangiomas have been conducted around the world, complete information about the origin of hemangiomas has not been established. Studies show that hemangioma is predominantly localized in the head and neck area (up to 70%), the child's appearance varies from disorder to disorder. It should be noted that factors that can lead to the development of HA include factors such as genetics, pregnancy while taking contraceptives, chronic diseases, ARVI, toxicosis, premature birth, fetal weight less than 1500 grams. More common in the Central Asian region [2, 6]. HA growth develops in 5 stages: initial, prodromal, proliferation, maturation and involution [3, 5, 10]. 15-20% absorption is observed in HAs located on the skin [1, 5, 10].

Currently, there are more than 20 classifications of hemangiomas in the world according to shape, nature, histological structure, complications and other characteristics [5, 8, 9]. Some of them are still used in the clinical practice of some clinics, for example, the simplified classification of HA proposed by Kondrashin (1963) [1, 3, 5, 7, 9, 10].

- Simple capillary
- Normal hypertrophy

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- Cavernous
- Mixture
- Systemic hemangiomas

In international practice, to systematize vascular malformations, the classification adopted by the International Society for the Study of Vascular Anomalies (ISSVA) at the 11th Symposium of the International Society for the Study of Vascular Anomalies, held in Rome in 1996, is used [1, 4, 5, 6, 10]. In 2007, 2016 and 2018 the accepted classification was supplemented [1, 10]. According to him:

Vascular defects:

1. Vascular tumors:

- 1.1. Infantile hemangioma (children's hemangioma),
- 1.2. Congenital hemangioma:
 - 1.2.1. Rapidly involuting congenital hemangioma (RICH)
 - 1.2.2. Non-involving congenital hemangioma (NICH)
- 1.3. Tufted hemangioma,
- 1.4. Capsular hemangioendothelioma,
- 1.5. Malignant hemangioendothelioma,
- 1.6. Rare hemangioendothelioma,
- 1.7. Acquired vascular tumors:
 - pyogenic granuloma,
 - hemangioma in the form of a target,
 - microvenular hemangioma,

2. Malformations of blood vessels:

2.1. Capillary malformations:

- "wine stain"
 - telangiectasia,
 - angiokeratoma,
- 2.2. Venous malformations:
 - Normal sporadic,
 - Bean syndrome,
 - With congenital familial changes in the skin and mucous membranes,
 - glomangioma,
 - Mafucci syndrome.

2.3. Lymphatic malformation.

2.4. High-velocity vascular malformations

2.4.1. Arterial malformation.

2.4.2. Arteriovenous fistula.

3. Combined complex vascular malformations.

4. Others.



Purpose of the study. Improving the results of treatment of patients with hemangioma of the scalp in young children.

Materials and control methods. Scientific work was carried out in private clinics “Turon Tibbiyot”, “Davo”, “Medical Clinical Center NG” of the Namangan region during 2020-2024. In a scientific study, propranolol was used in the treatment of hemangiomas located on the scalp during breastfeeding.

The study examined 72 patients of nursing age; all of them were treated with the selection of drug treatment tactics depending on the stage of development of hemangioma of the scalp. The age group of patients ranged from 40 days to 1 year. 77.8% of patients are girls, 22.2% are boys.

Table 1 Age distribution of patients with hemangiomas of the scalp during breastfeeding.

Age group	Number of patients	Frequency (%)
A period of up to 3 months	13	18,1±4,9*
Period up to 3-6 months	19	26,4±3,9*
Period up to 6-9 months	22	30,5±3,2*
Period up to 9-12 months	18	25,0±2,8
Total	72	100

* R < 0.05 compared with the comparison group.

Table 2 Location of skin hemangiomas in the scalp.

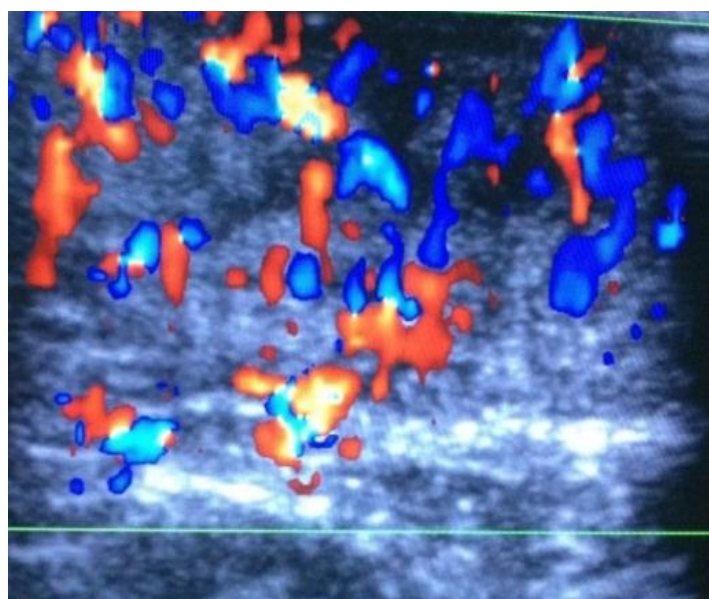
Location	Number	%
Frontal area	13	18,1±3,4
Parietal area	27	37,5±5,1
Temporal area	8	11,1±4,4*
Occipital area	10	13,9±3,2
Several areas	14	19,4±1,7
Total	72	100,0

* P < 0,05 compared to the comparison group

All 72 patients with scalp HA received a β -blocker (propranolol). The main criterion for prescribing drug treatment is the age and weight of the child; treatment with the drug was carried out at a dose of 1-2 mg/kg under the control of arterial pressure and heart rates after examination by a pediatrician and cardiologist.



A

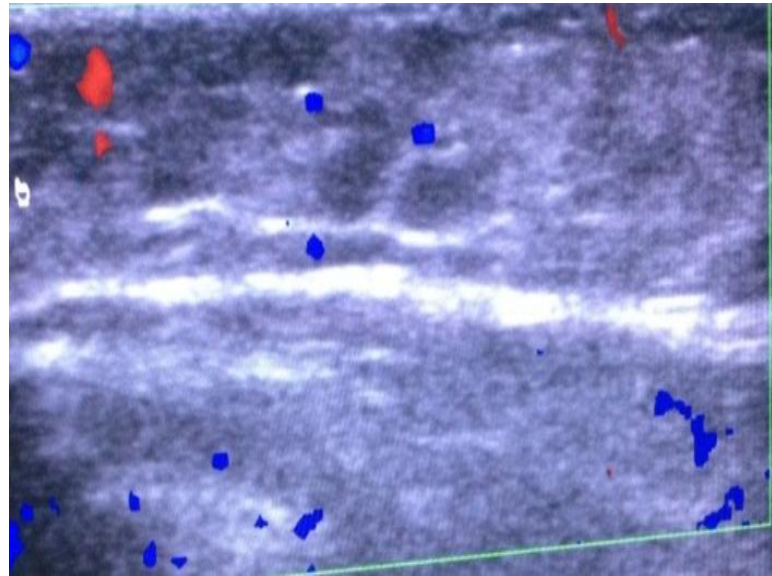


B





B



Γ

1- Picture. Patient R. 7 months. Diagnosis: infantile hemangioma of the left upper lobe before treatment (A) and Doppler image of the same condition (B). (C) and Dopplerography (D) picture of hemangioma after drug treatment (for 2 months).

The course of treatment was carried out for at least 2 months, and after obtaining positive results in dynamics, it was continued for up to 6 months. Before starting treatment and during treatment, it is necessary to monitor the patient's cardiovascular activity; examination methods such as ECG, heart rate measurement, blood pressure monitoring and echocardiogram were carried out. Sick children should be under the supervision of a cardiologist. 90% of treatment procedures were ambulatory treatment, 10% in a day hospital treatment.

The effectiveness of HA treatment was assessed based on the results of visual (photo) and UTT+Dopplerography. The effectiveness of drug treatment is determined once a month with UTT-Doppler examination, depending on the magnitude of the derivative and changes in blood flow velocity.

Venous blood flow before treatment was 8.6 ± 1.1 cm/sec, after treatment 1.0 ± 0.1 cm/sec ($R < 0.05$); in mixed HA it is 18.7 ± 2.2 cm/sec before treatment and 2.1 ± 0.1 cm/sec after treatment ($R < 0.05$).

Conclusion: The earlier treatment is started for patients with hemangioma of the scalp, the earlier treatment is started, the higher the effectiveness and results of treatment. Color Doppler study helps determine the volume of HA, the type of blood flow (arterial, venous and mixed) and blood flow velocity, and these data are important in predicting drug treatment of HA, assessing effectiveness and determining treatment tactics. Also, repeated UTT helps to continue treatment tactics depending on changes in the above-mentioned HA indicators during Doppler ultrasound.

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