Topical Propranolol Treatment for Infantile Hemangioma: A Case Series

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Background

Infantile hemangiomas (IHs) are the most common tumor of infancy. Oral propranolol has been the first-line treatment for the high-risk and deep IH, and there are some adverse effects, which include diarrhea, sleep disorder, acrocyanosis, hypotension and hypoglycemia. Topical propranolol therapy is recently attempted for the treatment of superficial IHs. Topical propranolol therapy would be easy to administer and have minimal potential adverse effects.

Method

We prepared 1% and 3% of propranolol creams for superficial IHs. The topical propranolol therapy was approved by the Institute Review Board of Iwata city Hospital and informed consents were obtained from all parents of the patients. We treated 3 children with IH using topical propranolol creams and none of the treated hemangiomas was located in a life-threatening area. Before start of treatment, clinical photographs were taken. Patients were advised to apply the cream twice a day in a thin layer to the IH.

Result

Case 1: 10-month-old girl had a superficial IH in upper lip. She was administered 1-3% propranolol cream to her IH. After 8 months of the treatment, her IH involuted.

Case 2: 11-month-old girl had a superficial IH in left forearm. She was administered 1-3% propranolol cream to her IH. After the treatment start, the treatment was withdrawn temporarily because of redness on her affected part. After 8 months of the treatment, the discoloration of her IH was noted.

Case 3: 3-month-old girl had multiple IHs in ankle joint (Figure). She was administered 1-3% propranolol cream to her IHs. After 8 months of the treatment, the discoloration and the reduction of her IHs was noted.

Conclusion

This preliminary study showed that topical propranolol treatment appears to have a benefit to superficial IHs of skin. Randomized studies are needed to confirm the efficacy and safety of topical propranolol treatment.