

A Retrospective Study of Infantile Hemangiomas: Demographic and Clinical Characteristics at Hera General Hospital, Makkah, Saudi Arabia

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Here are two main types of vascular lesion in an infant: vascular malformations and tumors. Hemangiomas, also known as strawberry birthmarks, are the most common vascular tumors of infancy, yet surprisingly the actual incidence of infantile hemangiomas remains unknown. Some studies have reported that the incidence of hemangiomas is up to 2.6% of neonates and up to 12% of children by the first year. Hemangiomas are so-called, bright, red marks over the skin and are a type of benign endothelial cell neoplasm. They usually appear in the first few days to months of life. Infantile hemangiomas are often characterized by two subsequent phases: a growth phase in the first year of life, followed by an involution phase over the next 5-7 years or more. The cause is unknown but different factors are found to influence infantile hemangiomas, such as family history, gender, race, preterm status, and low birth weight, as well as whether an infant is the product of multiple gestations or born to older mothers. These factors have been explored in many studies and may provide clues to their pathogenesis. The role of genetics in IH is only partially understood. Most IHs occur sporadically. Familial clustering has been reported, even though genetic predisposition is controversial. Evidence exists that some IHs are inherited. Walter et al reported 6 pedigrees with an autosomal dominant inheritance of high penetrance; for 3, linkage to chromosome 5q31-33 was proposed. In a small number of patients, genetic variants were associated with germ line mutations in the VEGFR2, VEGFR3 and TEM8 genes; these genes regulate major angiogenesis-signaling pathways, suggesting hyperactivation of VEGFR2 signaling in the pathogenesis of IH. Infantile hemangiomas are often benign with a self-limited course. However, in some cases they may cause complications such as permanent disfigurement and ulceration, which can lead to pain, bleeding, scarring, and infection. The diagnosis of infantile hemangiomas is usually based on the clinical appearance of the lesions.

The study included patients who were diagnosed with infantile hemangiomas from a logbook in the Dermatology Department of Hera General Hospital. The datasheet included demographic, prenatal, perinatal and clinical data, along with information about complications and treatment modalities. Statistical analysis was carried out using SPSS 13.0. The data were evaluated using descriptive statistical methods (mean \pm standard deviation, median, frequencies and percentages). For all continuous factors, a univariable analysis was performed using chi-squared tests. A two-tailed P value less than 0.05 was considered statistically significant. Results The medical records of 61 patients were examined. Most of our patients were female (69.9%), and the female-to-male ratio was 2:1. The majority of our patients (47.5%) were the product of spontaneous vaginal delivery, whilst 32.8% were delivered by cesarean section and 3.3% by ventouse delivery. A positive family history of vascular anomalies in first-degree relatives was reported in seven patients (11.5%). The age of the patients' mothers ranged from 22 to 43 years, with a mean maternal age of 28.8 years (SD \pm 5.8) and a median age of 28 years. The average maternal age of first-time mothers was 26.5 years. In 58 patients (95.1%), the age of onset for lesions usually occurred before two weeks (86.2%) but also could occur at two weeks and over (13.8%). Among data available for 55 patients, the most common site of hemangioma was seen in the face (36.4%). Other locations included upper limbs (18.3%), lower limbs (12.7%), chest (12.7%), scalp (9.1%) and 3.6% for each neck, back, and buttock. A total of 88.5% of our patients presented with a solitary lesion and 11.5% with multiple lesions. Complications were noted in eight patients (13.3%), including ulceration in 9.8% of patients, infection in 1.6%, and other complications in 1.6%. Treatment was administered to 36 patients (62.1%), with five being treated with systemic steroids (8.2%), 23 with topical beta-blockers (39.7%), six with pulsed-dye laser (10.3%), and six with systemic

propranolol (10.3%). Hemangioma progression was seen in 57.6% of our patients. Discussion Infantile hemangiomas are the most common vascular tumors of childhood, affecting about 5% of all infants. In this small group of patients, we systematically collected demographic, prenatal, perinatal, and clinical data on infants with hemangiomas to identify significant trends of the disease, including the different treatment modalities. The female to male ratio was 2:1, which is comparable with the previously published ratio that ranges from 1.4:1 to 3:1 [16-19]. The reason for female predominance is unclear. Kindred studies have suggested that a subset of hemangiomas may be inheritable and linked to genes on chromosome 5 [20]; no genetic mutations on the X chromosome have been reported. Infantile hemangioma lesions range from a few millimeters to several centimeters in diameter. Most of our patients presented with solitary lesions (88.5%), with only 11.5% of them suffering multiple lesions, which is less than the data published in one study [21]. This may be due to a limited number of cases in our study. In one published study [22], the authors found that 51% of their patients had complications, including ulceration (13%) and infections (11%). This is a greater amount of incidences than we found, as 9.8% and 1.6% of our patients suffered ulceration and infection, respectively. This difference could be explained by the fact that the aim of the other research was to identify complications in hemangioma patients.

We find that hemangiomas more commonly occur in premature, female infants who are the product of single gestation. More studies are needed to define further the risk factors and complications for hemangiomas and to understand the relationship between potentially confounding factors.

Keywords: Infantile hemangiomas; Makkah