

Herpes zoster in children: A prospective study

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Abstract

Background Herpes zoster is a painful dermatomal vesicular skin eruption brought on by latent varicella virus. One million case are reported in the United States each year. Zoster is not common in childhood and young adult life. Over the age of 50, the incidence rise and continues to rise in successive decades of life so, the incidence is around 11 cases per one thousand patient-year at 80 years. The most frequent consequence of zoster in those fifty years of age and over is postherpetic neuralgia, it is usually defined as having ongoing pain for at least ninety days after the zoster rash goes away.

Objective Study designed to analyze clinicoepidemiological data for herpes zoster in the pediatric population in order to reduce long-term complications.

Methods A prospective study from June 2020 to June 2022 was carried out in primary health hospital in Baghdad city. The research covered all clinically confirmed cases of zoster in children up to age of 12 years.

Results Over the duration of two-year a total of 50 child between the age of 1-12 years were diagnosed to have herpes zoster. Out of 50 patients, 29 (58%) were girls and 21(42%) were boys. Of these 27 (54%) were in age group of 1-6years and 23(46%) were in age group of 6-12years. Three years old was the youngest patient while 10 years old was the oldest. Number of cases with history of previous chickenpox was 40 (80%) the remaining 10 (20%) did not have history of chickenpox. All patients (100%) were not vaccinated because vaccine not available in Iraq. All cases (100%) was negative for HIV. Involvement of thoracic dermatome was seen in 45 (90%) of patients, upper limbs in 3 cases (6%) and lower limbs 2 case (4%).Over the course of the follow up period, post herpetic neuralgia not observed in any child.

Conclusion Early childhood varicella exposure increases risk of developing herpes zoster in children. Herpes zoster in children not always be a sign of an underlying immunological disease or malignancy. In general the course of zoster in children is milder and resolve without complications.

Key words

Herpes zoster; Childhood; Varicella zoster virus.

Introduction

Herpes zoster is a painful dermatomal vesicular skin eruption brought on by latent varicella virus, One million case of zoster are reported in

the United States each year.¹ Zoster is not common in childhood and young adult life, Over the age of 50, the incidence rise and continues to rise in successive decades of life so that at age 80 years the incidence is approximately 11 cases per one thousand patient-years.² The most frequent consequence of zoster in those fifty years of age and over is postherpetic neuralgia, it is usually defined as having ongoing pain for at least ninety days after the zoster rash goes

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away.³ A localized vesicular rash on dermatomal distribution and pain, which may be severe and accompany other symptoms including fever, headache and malaise, are frequently the initial signs of zoster, It's possible for the pain to be sharply concentrated, unilateral, or more diffuse, Pruritus can occasionally accompany or replace pain as an early sign of shingles.⁴ In trigeminal zoster, the interval between the commencement of the pain and the beginning of the eruption is typically 1.4 days, but it is 3.2 days in thoracic zoster.⁴ The thoracic, cervical, trigeminal and lumbosacral dermatomes are the ones that are most frequently effected. However, as people age, ocular zoster becomes more common, The eruption may very seldom be bilateral.^{5,6} Despite being regarded as uncommon condition, pediatric herpes zoster is becoming more common, according to several research.⁷ It is typically observed in chemotherapy patients, children with HIV, and cellular immune deficiencies.⁸ Children with immunocompetent status may also contract herpes zoster, and new findings indicate that the incidence of cases in children who appear to be in good condition is rising.⁹ There is no need for a laboratory test for malignancy or hidden immunodeficiency if physical examination and history of a previously healthy kid with zoster are both negative.¹⁰

Methods

A prospective study from June 2020 to June 2022 was carried out in primary health hospital in Baghdad city. The research covered all clinically confirmed cases of zoster in children up to age of 12 years. This study was designed to analyze clinicoepidemiological data for herpes zoster in children in order to reduce long-term complications. Since the study center lacked the necessary equipment, the diagnosis was made solely on the basis of clinical presentation.

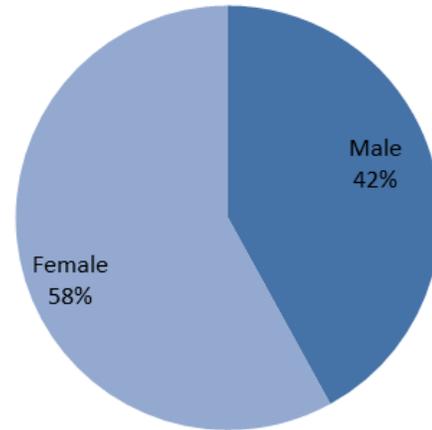


Figure 1 Sex distribution.

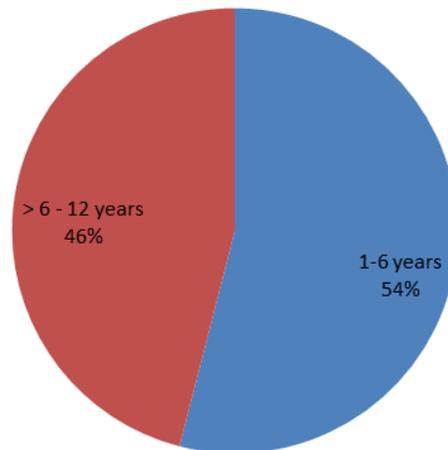


Figure 2 Age distribution.

Results

Over the study duration of two-year a total of 50 child between the age of 1-12 years were diagnosed to have herpes zoster. Out of 50 patients, 29 (58%) were girls and 21 (42%) were boys (Figure 1). Of these 27 (54%) were in age group of 1-6 years and 23 (46%) were in age group of 6-12 years (Figure 2). Three years old was the youngest patient while 10 years old was the oldest. Number of cases with history of previous chickenpox was 40 (80%) the remaining 10 (20%) did not have history of chickenpox. All patients (100%) were not vaccinated because vaccine not available in Iraq. All cases (100%) were negative for HIV. No sign or symptoms of immunodeficiency disorder



Figure 3 10 years old female with herpes zoster on trunk.

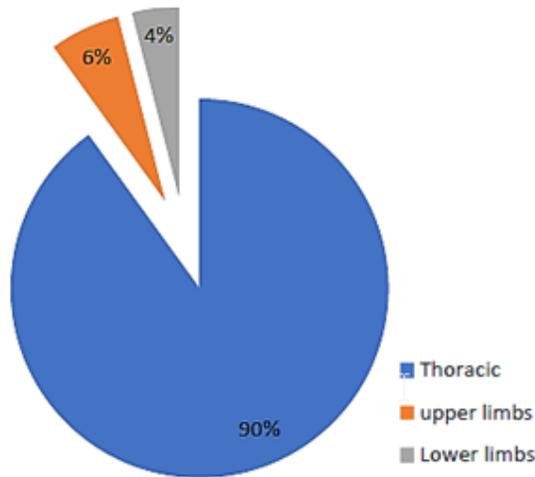


Figure 4 Dermatomal distribution.

observed in any patients. History of taking immunosuppressive drugs or malignancy was negative. Involvement of thoracic dermatome was seen in 45 (90%) of patient (**Figure 3**), upper limbs in 3 cases (6%) and lower limbs 2 case (4%) (**Figure 4**). The children showed no prodromal symptoms, and all of them had clustered vesicles in dermatomal patterns for the first time. Along the affected dermatome, the lesions were accompanied by a slight burning sensation and some pain. In two to three weeks, all of the children's lesions completely disappeared without any complication. Over the course of the follow up period, post herpetic neuralgia not observed in any child.

Discussion

The primary form of varicella typically affects

children, whereas its reactivation (herpes zoster) affects adults. Children under the age of 14 only have a 0.45 per 1000 incidence of HZ. The prevalence of HZ is between 1.2 and 3.4 instances per 1000 healthy people, and it rises to 3.9-11.8 cases per year among people over 65 years.^{11,12} In contrast to chemotherapy, which suppresses cellular immunity, zoster in the old age is associated with loss of varicella specific immunity. Patients with HIV may undergo viral T lymphocyte cell destruction.¹³ While recent investigations have revealed no rise in the prevalence of malignancy among kids with zoster as documented in this study, childhood herpes zoster was once assumed to be a sign of malignancy, especially acute lymphoblastic leukemia, In our study Children typically have a milder disease course, lasting a mean of 1-3 weeks. The most common adult zoster complication, post herpetic neuralgia, has never been documented in children in this study. Almost all series and individual case reports that have been published thus far have emphasized that childhood zoster is a generally benign illness with few prodromal signs, post herpetic neuralgia and serious sequelae. Children with a confirmed history of childhood chickenpox have a higher relative risk of developing childhood herpes zoster than those without history of chickenpox as in our study. Number of patients with history of previous chickenpox was 40 (80%) the remaining 10 (20%) did not have history of chickenpox.¹⁴ Children developing HZ de novo without developing chickenpox may be explained by that the chickenpox episode is minor and not reported by the parents or the treating physician.

Conclusion

Childhood herpes zoster is a rare condition. Early childhood varicella exposure increase risk of developing zoster in children .both healthy or immunodeficient kids can get childhood zoster.

Zoster in children may not always be a sign of an underlying immunological disease or malignancy. In general herpes zoster in children is milder and resolve without complications.

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