Epidemiological study in roseola infantum in Babylon

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الخلاصـة

الحمى الوردية هي حمى ذات طفح جلدي تحدث غالبا" في السنة الأولى من العمر. ولها أسماء أخرى متعددة تدل على سرعة ظهور وانتشار الطفح الجلدي منها الطفح الوردي للرضع والحصبة الكاذبة. يعتبر الوبائي للحلأ البشري السادس هو المسبب للحمى الوردية . هدف هذه الدراسة هو للتنبؤ بالمرض في وقت مبكر من خلال الفترة من السنة التي يظهر فيه المرض بنسبة عالية, الفئة العمرية الشائعة لحدوث المرض والصفات السريرية الشائعة. وقد أجريت دراسة مقطعية في مستشفى بابل للولادة والأطفال في محافظة بابل ولمدة 12شهر ابتدءا" من آذار 2009 إلى شباط 2010, الدراسة شملت 48 حالة من الحمى الوردية التي زارت العيادة الخارجية والتي تمت متابعتها لمدة 3 أيام (22 حالة أدخلت المستشفى و26 حالة تم تقييمها بعد الزيارة الثانية) . أخذت المعلومات للعمر والجنس المريض وسجل تاريخ حدوث المرض. من خلال هذه الدراسة وجد أن أعلى نسبة للحمى الوردية كانت في الفئة العمرية من 10-12 شهرا". وكانت الحالات في المدينة هي أكثر من الحالات في الريف وحدثت أكثر الإصابات في الفترة من شهر نيسان إلى شهر حزيران. لا يوجد فرق معنوي بين الجنسين في نسبة الإصابة بالمرض. وكانت أكثر الأعراض السريرية شيوعا" في المراحل الأولى للمرض (قبل ظهور الطفح) هي تضخم الغدد اللمفاوية القفوية (100%) تبعتها تضخم الغدد اللمفاوية العنقية (89,6 %).

Abstract

Roseola is a mild febrile exanthematous illness occurring almost exclusively during infancy. Among the many alternative names for the disease are exanthem subitum (indicating the sudden and surprising appearance of the rash), the rose rash of infants and pseudo-rubella. Human herpesvirus 6 (HHV-6) is the etiological agent of roseola infantum. The aim of this study is to predict the disease early by the time of high incidence of this disease, the common age of presentation and the commonest clinical findings. A cross-sectional study was conducted in Babylon Teaching Hospital for Maternity and Children in Babylon city for 12 months, from the 1st March 2009 to the 1st February 2010.

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The study involved 48 cases of roseola who visited the outpatient clinic which were followed up for 3 days (22 cases were admitted to hospital and 26 cases were reevaluated after a second visit). In the result of this study we found roseola was highest in infants with age group 10-12 months. The cases in urban area is more than rural area, it occur more in the period from April to June. There was no significant sex predominance in the incidence of the disease. The most common clinical finding were occipital lymph node enlargement in all cases (100%) and cervical lymph node enlargement in (89.6 %) infants.

Introduction

Roseola is a mild febrile exanthematous illness occurring almost exclusively during infancy [1]. Among the many alternative names for the disease are exanthem subitum (indicating the sudden and surprising appearance of the rash), the rose rash of infants and pseudo-rubella [2]. Human herpesvirus 6 (HHV-6) is the etiological agent of roseola infantum [3] [4]. HHV-6 was discovered 15 years ago [5], and was then grouped as a member of the roseola genus of the β-herpesvirus subfamily of human herpesviruses [6] [7]. HHV-6 has been shown to infect almost all children by 4 years of age [8]. Roseola is characterized by the rapid onset of high fever, ranging from 37.9C° to 40C° (101-106 F°), and persisting for 3-5 days [1] [9]. An erythematous maculopapular rash appear within 12-24 hrs of fever resolution, on the trunk with spread to the neck, face and extremities [10]. Cervical lymphadenopathy is common, but the appearance of posterior occipital lymphadenopathy over the first 3 days is most characteristic [11] [2]. Seizures may occur in 5-10 of children with roseola during the febrile period [12]. Roseola can develop in children year-round; some series indicate a higher incidence during spring and full months [1]. Respiratory secretions and asymptomatic shedding of HHV-6 by older children and adults in close contact with infants is the most probable source of infection [11] [13]. The diagnosis of roseola can be established primarily on the basis of age, history and clinical findings [1].

Objectives

By this study it was possible to predict the disease by the time of high incidence of this disease, the common age of predilection and the commonest clinical findings.

Patients and methods

A cross-sectional study was conducted in Babylon Teaching Hospital for Maternity and Children in 12 months period, from march 2009 to February 2010. We studied 48 cases of roseola infantum who were visited outpatient clinic which were followed up for 3 days (22 cases were admitted to the hospital and 26 cases were re evaluated in the second visit. Information were registered about age, sex and date of onset of the disease. All cases were submitted to full clinical examination, temperature was taken by axillary rout (corrected by adding 0.5C°). The diagnosis of roseola infantum was depended on history and clinical examination. The cases that considered positive who had a history of high fever (38.5-40 C°) for 3-5 days, it is followed by an abrupt disappear of temperature and appear of the rash meanwhile, the rash is maculopapular which appears on the face, trunk and involves all the body within 24 hrs. associated with small occipital and post auricular and cervical lymph node enlargement (0.5-1.5cm in diameter). Cases not develop rash during follow up not considered roseola.

Results and discussion

The study revealed the peak age of acquisition of roseola was in infants with age group 10-12 months were 25 (52.1%) which significantly different from other age groups ($p < 0.01$). Followed by the age group 7-9 months were 11 (22.9%), then the age group 13-15 months were 5 (10.4%), then the age 4-6 months were 4 (8.3%), then the age group 16-18 months were 3 (6.3%), then the last age group 1-3 months there were no cases with roseola (figure 1). This result is similar to the results found by Vianna *et al.,* 2008[14]. This explained by that there is maternal immunity in the

earlier months of life, followed by the acquisition of the immunity in the later months of life by exposure to the virus (HHV-6).

About sex distribution, it was found that the affected female were 25 (52.1%) which is not significantly ($p > 0.01$) more than the affected male were 23 (47.9%) (figure 2). Zerr *et al.*,(2005)[15] in Washington found the acquisition of roseola was associated with female sex.

Regarding the residence, it was found that the incidence of roseola in urban area were 30 (62.5%) is significantly ($p < 0.01$) more than those who live in rural area were 18 (37.5%), this explained by that roseola transmitted by air droplet which increase in crowding (urban) and decrease in ventilated area (rural) (figure 3). About seasonal variation, it was found that the incidence of roseola during the year is more in the period from April to June were 21 (43.75%), followed by the period from January to March were 12 (25.0%), followed by the period from June to September were 9 (18.75%), then the last period from October to December were 6 (12.5%) (figure 4). This result is similar to the result found in Japan (late winter and early spring) [8]. In the clinical finding, it was found that the occipital lymph node enlargement occur in all infants 48 (100%), and the cervical lymph node enlargement occur in 43 (89.6%) infants (figure 5).

From this study we conclude that the gender has no important role in the acquisition of HHV-6. HHV-6 is increased in late period of winter and early spring. Roseola is expected in every infant with high fever and cervical lymphadenopathy. So it can elevate the index of suspicion of roseola infantum in the earlier stage of the disease (before rash appearance) depending on age of occurrence, clinical findings and seasonal variation.

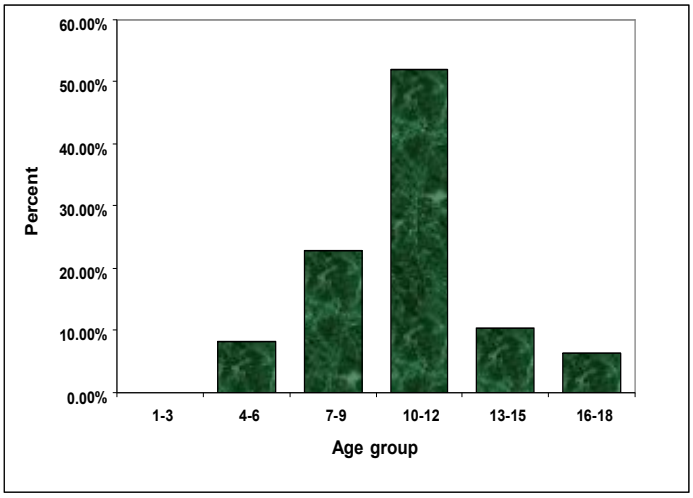

Figure (1): Roseloa infantum in relation to age group (months).

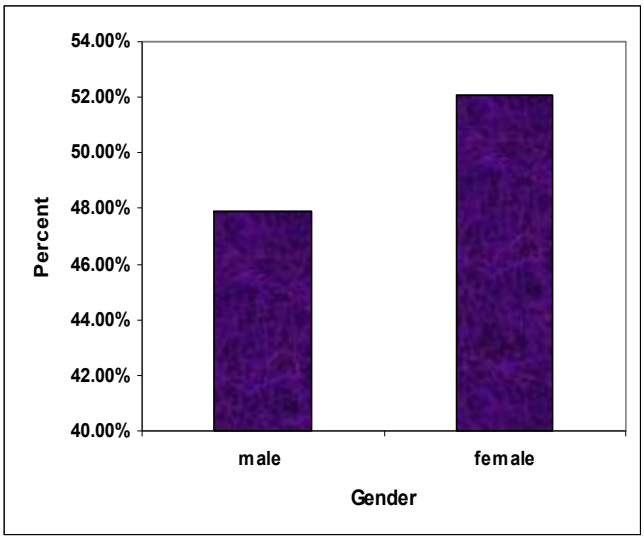

Figure (2): Roseloa infantum in relation to sex.

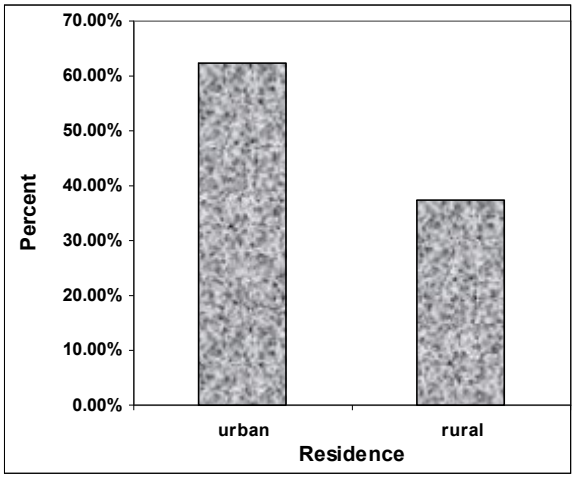

Figure (3): Roseloa infantum in relation to residence.

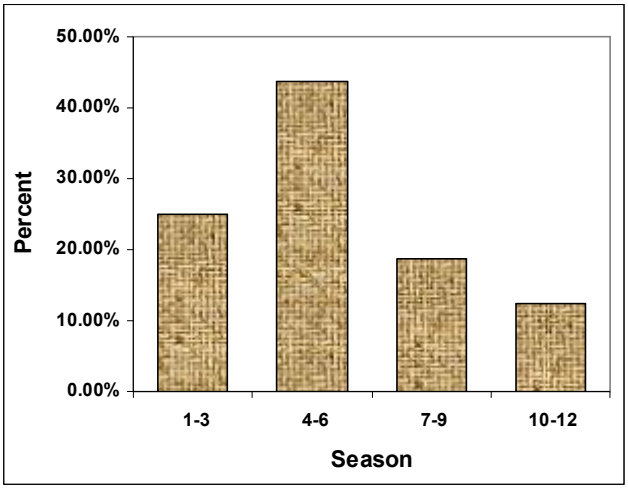

Figure (4): Roseloa infantum in relation to seasonal variation.

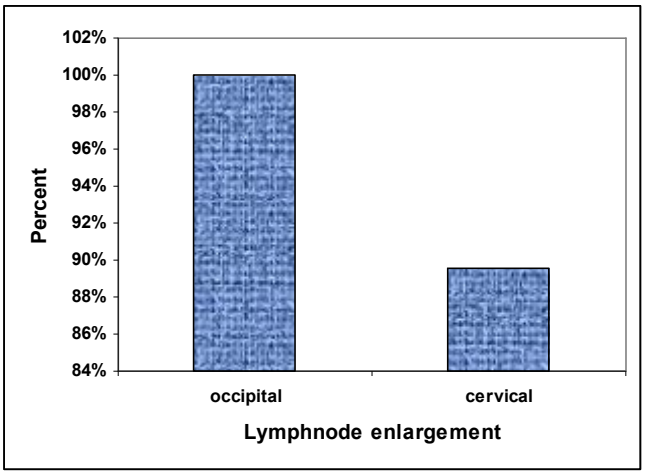

Figure (5): Lymphadenopathy in roseola infantum.

Recommendation

we recommend that in any infant with high fever without focus we should consider the time of incidence, the age of patient and the associated clinical findings that were mentioned are important factors in helping the primary diagnosis of roseola infantum. Further study should be done in Iraq to look for other factors helping in diagnosis.

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