Original article

Impetigo in children in sector Gaza

ThaerAlmomani
1-department of Pediatrics, Royal Medical Services. Amman –Jordan.

Corresponding author: ThaerAlmomani Email: thaer_mom@yahoo.com

Abstract
Objective: To present a profile of impetigo in children in sector Gaza.
Methods: All patients that were seen in the outpatient clinic in Jordanian hospital in Gaza between 25/11/2010 and 24/01/2011and presented with skin rash were examined for impetigo. Patients were divided into three age groups: group I: 0-5 years, group II: 5-9 years and group III: 9-14 years.
Results: A total of 6530 children were seen in outpatient clinic for various diseases and conditions during study period. 165 cases of impetigo were reported with 108 males and 57 females. Impetigo was higher in age group II: age 5-9 years, followed by group III: 9-14 years. The incidence of impetigo among children seen in clinic was 0.02% and was higher in males. Commonest manifestation was blisters or sores on the face, neck, hands, and diaper area.
Conclusion: Impetigo is a common disease among children in Gaza. Major contributing factors to this disease are: crowding, poor hygiene, scarce water supplies, low socio-economic class, warm weather and presence of already irritated skin by problems such as eczema and insect bites.
Keywords: *Impetigo, children, Gaza.*

Introduction

Impetigo is an infectious skin disease caused by *S.* aurous or S. pyogenes (1). Impetigo is a common dermatological problem managed by both pediatricians and dermatologists (2).

The primary contributing factors in contracting impetigo seem to be poor hygiene and overcrowded living conditions. The incidence rate of impetigo is 28/100 000 inhabitants (3). The incidence is higher in the elderly (51/100 000 in persons aged >75 years) and a higher incidence was also found in immigrants (88/100 000) (4).

Impetigo is highly contagious and it can spread to anyone who comes into contact with infected skin or other items (such as clothing , towels , and bed linens) that have been touched by infected skin(5) . And because impetigo may itch, kids can spread the infection by scratching it and then touching other parts of their body. Impetigo may affect skin anywhere on the body but commonly occurs around the nose and mouth, hands, and forearms and in young children, the diaper area (6).

The two types of impetigo are non-bullous (crusted) which is caused by S. aureus and S. pyogenes and bullous (large blisters) which are always caused by S. aureus (7).

The purpose of this study is present data on impetigo in children seen at the Jordanian field hospital in Gaza strip

Methods

All children attending the pediatric outpatient clinic at the Jordanian field hospital in Gaza between 25/11/2010 and 24/01/2011with skin rash were included in this prospective study. Patients were divided into three age groups. Group I: age 0-5 years. Group II: age 5-9 years and group III: age 9-14 years.

The diagnosis was based on the appearance of the rash. Occasionally they may need to take a sample of fluid from blisters.

Clinical symptoms were defined as red sores that pop easily and leave a yellow crust, fluid-filled blisters, itchy skin, and swollen lymph nodes .The diagnosis was based on the patient's history with physical and laboratory findings.

This study used the clinical examination (type of skin lesions, distribution of rash and presence of recent injuries or irritation to the skin) followed by microscopic test to confirm the diagnosis.

Children with non-bullous impetigo commonly have multiple coalescing lesions on their face (perioral, perianal) and extremities or areas with a break in the natural skin defense barriers. The initial lesions are small vesicles or pustules that rupture and become a honey-colored crust with a moist erythematous base.

Bullous impetigo is considered to be less contagious than the nonbullous form. It tends to

affect the face, extremities, axillae, trunck and perianal region of neonates but older children and adults can also be infected. Lesions are fragile thin-roofed, flaccid, and transparent bullae with a clear, yellow fluid that turns cloudy and dark yellow.

Results

From a total of 6530 children who were examined and treated for different diseases, two hundred and eight patients (3.2%) were having skin rash in addition to other symptoms, 30 were excluded because they were diagnosed to have other diseases that cause itching(chicken pox and measles) and the remaining diagnosed to have impetigo. Distribution by age groups illustrated in table 1.

Table 1.Demographics.

Gender/age group	0-5	5-9	9-14	total
male	11	67	30	108
female	10	30	17	57
Total	21	97	47	165

From the total 6530; 600 patients presented with different skin manifestations, 160 patients presented with napkin dermatitis, 120 patients with scabies , 90 patients with viral exanthem due to several viral infections ,30 patients with chicken pox , 20 patients with Insect bite reaction (popular urticaria) , 20 patients with infected eczema and 10 patients presented with picture of German measles' and rubeolla and 165 patients were diagnosed by clinical examination and positive microscopic test as impetigo , table 2.

Table 2.Common skin lesions seen in the clinic.

Clinical manifestation	Number	%
Napkin dermatitis	160	26.7
Scabies	120	20
Viral exanthem	95	16
Chicken pox	30	5
Insect bite	20	3.3
Infected eczema	20	3.3
Measles	10	1.6
Impetigo	165	27.5
Total	600	100%

All impetigo patients presented with main complain of skin blisters, additional complains were itching, skin infections, scratch marks on skins. One hundred and ten (67%) patients complained of bullous lesions 55 (33%) of non-bullous lesions.

Commonest site for the impetigo skin lesion was face in 59(35.7%) patients, followed by neck 43(26%) patients , extremities 26 (15.8%) patients , axillae 23 (13.9%) patients and diaper area 14 (8.5%) patients , table 3.

Table 3.Distribution of skin lesion.

Site of skin lesion	Number of lesion (%)
Face	59(35.7%)
Neck	43(26%)
Extremities	26(15.8%)
Axillae	23(13.9%)
Diaper area	14(8.5%)
Total	165(100%)

Discussion

Impetigo is a contagious disease caused by bacteria (8). The condition of 'impetigo' is caused by an acute bacterial infection of the superficial layers of the epidermis is primarily caused by S. aureus or S. pyogenes (9). It is an exceedingly common disease of world -wide distribution. It is endemic in many developing countries (10).

Although impetigo is more common where overcrowded conditions prevail, it can affect any individual irrespective of social status, personal hygiene, profession, gender, age or ethnic origin (11). It is primarily characterized by blisters and itching. Scratching of these areas may lead to spread of the bacterial infection (12). A recent review of the prevalence of childhood skin diseases in developing tropical and subtropical countries concluded that the prevalence of impetigo is in the range of 1–2 %(13).

Tinea, folliculitis, erysipelas and Chickenpox, to mention a few can be presented with skin blisters (14). These diseases must be differentiated from impetigo.

Impetigo can be one of the easiest conditions to diagnose depending on clinical data. The site, severity, and duration are all useful in the diagnosis. The classical lesions of impetigo presents as multiple coalescing lesions on the face and extremities or areas with a break in the skin (15). In our study the most frequent symptom was skin blisters, followed by itching.

In infants and young children, impetigo often affects the face, neck, axillae, extremities, and diaper area (16). Widespread eczematised erythema is common, particularly on the trunk, and is

sometimes more troublesome than are lesions at typical sites. And also study showed that most common affected age group is between 5-9 years with male predominance.

The factors generally thought to explain the high prevalence and incidence of common skin infections in developing countries are poverty related and include: a low level of hygiene, including difficulties accessing water; climatic factors; and overcrowding living conditions.

Impetigo in our study is common and frequent because of poverty, overcrowded living conditions, low socioeconomic condition and poor hygiene. But it's less common than in other countries and communities. Prevalence of impetigo in African children can be as high as 40–80%, although a figure of 4.7% has been reported in Nigerian school children.

Conclusion

Impetigo is a common health problem among children in Gaza; the disease can be reduced by improving socioeconomic, hygienic conditions and by implementing a proper system of social education, as well as by promoting more efficient health service. Work needs to continue on addressing these all-important factors to bring about long-term change.

References

1. Heukelbach J, Feldmeier H. Scabies. Lancet 2006; 367: 1767–74.

2 .Steer AC, Jenney AW, Kado J, et al. High burden of impetigo and scabies in a tropical country. PLoS Negl Trop Dis 2009; 445 -467.

3. Engelman D, Kiang K, Chosidow O, et al. Toward the global control of human scabies: introducing the International Alliance for the Control of Scabies. PLoS Negl Trop Dis 2013; 7: 1–4.

4. Mahe A, Hay RJ. Epidemiology and management of common skin diseases in children in developing countries. Geneva: World Health Organisation; 2005.

5. Bowen AC, Tong S, Chatfield MD, Carapetis JR. The microbiology of impetigo in Indigenous children: associations between Streptococcus pyogenes, Staphylococcus aureus, scabies, and nasal carriage. BMC Infect Dis 2014;14(1):38-54.

6. Harvey F. The treatment of impetigo at the front. Lancet 1917; 190: 582.

7. Bigger JW, Hodgson GA. Impetigo contagiosa treated with microcrystalline sulphathiazole. Lancet 1944; 244: 78–80.

8. Mackenna RM, Cooper-Willis ES. Impetigo contagiosa in the army, treated with microcrystalline sulphathiazole. Lancet 1945; 246: 357–88.

9. Carapetis JR, Walker AM, Hibble M, Sriprakash KS, Currie BJ. Clinical and epidemiological features of group A streptococcal bacteraemia in a region with hyperendemic superfi cial streptococcal infection. Epidemiol Infect 1999; 122: 59–65.

10. Dinger J, Mueller D, Pargac N, Schwarze R. Breast milk transmission of group B streptococcal infection. Pediatr Infect Dis J 2002;21:567—568.

11. Gear RJ, Carter JC, Carapetis JR, Baird R, Davis JS. Changes in the clinical and epidemiological features of group A streptococcal bacteraemia in Australia's Northern Territory. Trop Med Int Health TM IH 2015;20(1):40-47.

12. Boyd R, Patel M, Currie BJ, Holt DC, Harris T, Krause V. High burden of invasive group A streptococcal disease in the Northern Territory of Australia. Epidemiol Infect 2016;144(5): 1018-27.

13. Skull SA, Krause V, Coombs G, Pearman JW, Roberts LA. Investigation of a cluster of Staphylococcus aureus invasive infection in the top end of the Northern Territory. Aust N Z J Med 1999;29(1):66-72.

14. UNDP. Human development report 2013. The rise of the south: human progress in a diverse world. New York: United Nations Development Programme, 2013.

15. Bangert S, Levy M, Hebert AA. Bacterial resistance and impetigo treatment trends: a review. Pediatr Dermatol 2012;29:243–8.

16.Bernard P. Management of common bacterial infections of the skin. Curr Opin Infect Dis 2008;21:122–8.