

Study to Determine the Infectious Skin Disorders Encountered in Children Attending A Tertiary Care Hospital in Bihar Region: Retrospective Observational Study

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Abstract

Aim: To determine the infectious Skin Disorders Encountered in Children Attending a Tertiary Care Hospital in Bihar region. **Methods:** This retrospective study was done the Department of skin & V D, Nalanda Medical College and Hospital, Patna, Bihar, India, from December 2019 to November 2020. 250 children aged less than 18 years were included in this study. Diagnosis of skin diseases in the clinic were made by trained dermatologists. The diagnoses were mainly clinical, but laboratory confirmation was done where necessary. The infectious skin diseases diagnosed were categorized into bacterial, fungal, viral disorders and infestations. **Results:** A total of 250 children aged less than 18 years were seen in the Dermatology clinic over the 1-year period. The mean age of children with ISDs was 8.12 ± 6.3 years with a male to female ratio of 1.22:1. ISDs were diagnosed in 100 (40%) of these children. Types of ISDs Fungal skin infections were seen in 45 (45%) patients. Parasitic skin infections were diagnosed in 30 (30%) patients. Viral and Bacterial skin infections were observed in 15 (15%) and 10 (10%) children respectively. The most frequent ISDs according to aetiologic group were: Scabies in 30 (30%), Verruca Vulgaris in 12 (12%), Tinea corporis in 12 (12%) and Impetigo in 5 (5%). 3.1.7 Relationship of age and gender occurrence of ISDs Age and Gender showed no significant association with the occurrence of skin diseases. **Conclusion:** ISDs are common in children with a prevalence of 40%. Scabies was the leading ISDs in our study. Age and gender showed no significant association with the occurrence of ISDs among the children studied.

Keywords: Skin, Disorders, Children, Infection.

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Introduction

Skin diseases represent an important part of the morbidity among children and are possibly influenced by geographic, racial, social, cultural, and economic factors[1]. In developing countries, skin diseases constitute a significant public health problem because of certain climatic

conditions such as high temperatures, humidity, poor hygiene, scarce access to water, and family households that may contribute to the development of these diseases. In 2005, The World Health Organization (WHO) published a detailed review of the literature about the

epidemiology and management of the most common skin diseases among children in developing tropical countries. This review examined 18 studies mostly conducted in rural areas, and those studies found infection to be the most frequent skin disease. Bacterial diseases had the highest prevalence, oscillating between 0.2 and 35%, followed by tinea capitis with an occurrence of 1–17%, scabies prevalence varied between 0.2% and 24%; viral infections appeared at a rate of 0.4–9% (mostly molluscum contagiosum); pediculosis capitis prevalence between 0 and 54% and reactions caused by insect bites had an occurrence rate of 0–7.2% [2]. The frequency of skin diseases in those studies varied between 21 and 87%; despite being so frequent around the world, skin diseases have not been considered when developing strategies in public health [2]. Therefore, it is of great importance to have national estimates of these diseases to develop strategies for their control and prevention. Given the diversity of environmental, social, and economic conditions in Colombia, each city must be studied independently. Thus, this study was performed in Bogotá, Colombia, which is a major city and the largest urban settlement in Colombia, with approximately 9,000,000 inhabitants. Bogotá is located 2640 m above sea level with no seasonal changes other than 2 rainy periods and a temperature that oscillates between 8°C and 20°C. In Bogotá, the socioeconomic stratum is classified into 6 levels based on the classification of properties by characteristics of the dwelling, the immediate surroundings, and urban characteristics. The socioeconomic stratum has been used as an indicator of poverty and a determinant of economic and social segregation [3,4]. Strata 1 (low-low) and 2 (low) include 48.8% of the population in the city, as well as the stratum with the lowest income (US 376.30 US on average for the year 2018), the highest rates of informal work (52.8%), and school lag (22.3%) [5], levels of inequality and poverty without major fluctuations between 2010

and 2018 (Gini index around 0.5 and monetary poverty around 11.9%) [4,5]. Due to these characteristics, this population has a higher risk of skin diseases. In a previous study, in the city of Bogotá, the prevalence of papular urticaria caused by flea bites in this population was 20.3% (CI 95%: 18.2 to 22.5%) in children aged 1–6 years [6]. Hence the present study was conducted with the aim to determine the infectious Skin Disorders Encountered in Children Attending a Tertiary Care Hospital in Bihar region.

Material and Methods

This retrospective study was done in the Department of skin & V D, Nalanda Medical College and Hospital, Patna, Bihar, India, from December 2019 to November 2020, after taking the approval of the protocol review committee and institutional ethics committee. After taking informed consent detailed history was taken from the patient or relatives. 250 children aged less than 18 years who were seen at the dermatology Department of skin & V D, Nalanda Medical College and Hospital, were included in this study. Relevant data were extracted from their medical files using a data collection proforma and these included age, gender, history of skin diseases and type of skin disease diagnosed. Diagnosis of skin diseases in the clinic were made by trained dermatologists. The diagnoses were mainly clinical, but laboratory confirmation was done where necessary. The infectious skin diseases diagnosed were categorized into bacterial, fungal, viral disorders and infestations.

Statistical Analysis

Data collected was coded and entered into Microsoft excel before analysis using the IBM SPSS Statistics version 21.0. Descriptive statistics were reported using frequency tables and charts. Discrete variables were compared using Chi-square test. Statistical significance was set at 95% confidence interval with p-value < 0.05.

Results

A total of 250 children aged less than 18 years were seen in the Dermatology clinic over the 1-year period. The mean age of children with ISDs was 8.12 ± 6.3 years with a male to female ratio of 1.22:1.

ISDs were diagnosed in 100 (40%) of these children. The most frequent ISDs according to aetiologic group were: Scabies in 22 (22%), Pityriasis Versicolor and Tinea Capitis 11 (11%) each, Tinea corporis and Impetigo 8 (8%) each. Relationship of age and gender occurrence of

Prevalence of ISDs

Table 1: Types of ISDs and gender distribution

Type of skin disease	Male n=55	Female n=45	Total N=100(%)
Pediculosis Capitis	3	5	8 (8)
Scabies	15	7	22 (22)
Tinea Corporis	4	4	8 (8)
Pityriasis Versicolor	5	6	11 (11)
Tinea Capitis	6	5	11 (11)
Tinea manum	1	1	2 (2)
Tinea Pedis	1	2	3 (3)
Diaper Candidiasis	2	1	3 (3)
Tinea Unguim	1	1	2 (2)
Tinea Cruris	1	1	2 (2)
Wart	2	1	3 (3)
Molluscum Contagiosum	5	3	8 (8)
Herpes Zoster	1	1	2 (2)
Varicella	1	0	1(1)
Hensen's Disease	1	1	2 (2)
Impetigo	4	4	8 (8)
Folliculitis	1	1	2 (2)
Furunculosis	1	0	1 (1)
Cellulitis	0	1	1 (1)

Table 2: Relationship of age and gender with the occurrence of ISDs

Variables	ISDs	No ISDs	Total	Chi-Square	P value	
	n=100(%)	n=150(%)	N=250(%)			
Age						
<5	25(38.47)	40(61.53)	65(100)	0.74	0.68	
5-10	35(45.45)	42(54.55)	77(100)			
>10	40(37.04)	68(62.94)	108(100)			
Gender						
Male	55(44)	70(66)	125(100)	2.33	0.17	
Female	45(36)	80(64)	125(100)			

Discussion

The overall prevalence of ISDs in this study was 40%. This is higher than the prevalence rates of 26.1% reported by

Ayanlowo et al.[7], in Lagos, Nigeria, 24.62% reported by Ozelik et al.[8], in Turkey and 27.2% reported is a study done in Saudi Arabia[9] It is however lower than the prevalence rates of between 51%

and 72.3% reported in some studies done in Nigeria[10,11], and Nepal[12]. The disparity in prevalence rates between our study and the other studies in comparison may reflect variations in contributory factors to ISDs such as hygiene practices, cultural differences and socioeconomic status among the participants in the different studies.

With regards to the aetiologic categories of ISDs, fungal disorders were the most common lesions noted in our study. A similar finding was reported by Yotsu et al.[13], in Cote d'Ivoire. In contrast, Vakirlis et al[14], reported viral infections as the most common aetiologic category of ISDs among the children studied in Greece. The prevailing temperate climate in their environment may have been favourable to viral agents as against the tropical African climate. Furthermore, two studies done in Ethiopia reported infestations and bacterial infections as the most common aetiologic categories of ISDs seen in their respective studies[15,16].

Concerning specific ISDs, scabies was the most common disorder seen in the present study. This is a neglected tropical disease which has shown resurgence in recent years due to the prevailing poor sanitary conditions and overcrowding in our society. On the contrary, several other authors reported tinea capitis as the leading ISDs found among the children they studied[11,17,18]. These studies in comparison were however done among school children unlike the present study which was conducted in a tertiary dermatology clinic. Additionally, studies done in Nigeria, Ethiopia and India all reported impetigo as the predominant ISD seen among children in their study[15,16,19-21].

Age and Gender showed no significant association with the occurrence of ISDs in our study. These findings have been corroborated by previous authors[15,22]. Conversely, other authors have reported

factors significantly associated with skin diseases to be age less than 10 years[11], and male gender[11,13]. The reason for this contrast from our study is unknown. It may however be related to the reduced capacity of the younger children below 10 years to maintain optimal personal hygiene without adult assistance and to the sometimes more adventurous nature of male children which brings them into closer contact with the aetiologic agents of these ISDs.

Conclusion

ISDs are common in children with a prevalence of 40%. Scabies was the leading ISDs in our study. Age and gender showed no significant association with the occurrence of ISDs among the children studied. It is hoped that findings from this study will be useful in the formulation of policies towards the prevention and control of these ISDs.

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