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A STUDY ON CUTANEOUS INFECTIONS IN CHILDREN REPORTING TO THE OUTPATIENT DEPARTMENT OF DERMATOLOGY AND PAEDIATRICS

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ABSTRACT

INTRODUCTION: *Skin ailments particularly infections and infestations are a common public health problem in developing countries like India with children being especially vulnerable.*

AIMS AND OBJECTIVES : *The aim of this study is to find out the prevalence of skin infections among children attending Dermatology and Paediatric department of Tirunelveli Medical college hospital.*

RESULT: *In our study we found bacterial infections especially impetigo was commonly encounted followed by parasitic infestation and fungal infection.*

CONCLUSION: *This study reflects the poor immune status of children.We should educate the parents regarding childrens personal hygiene and balanced diet to overcome these challenges.*

KEYWORDS : Children,bacterial,parasitic infections

INTRODUCTION

Skin infections such as pyodermaand ectoparasitic infections are common in developing countries, especially in tropical regions [1]. Despite their frequent occurrence, they are often not perceived to be a significant health concern, and with the exception of leprosy, these conditions are rarely addressed using population based disease control programmes.

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 hygeine, climatic factors; and overcrowding living conditions [1].

Tirunelveli district of Tamil Nadu, also known as Nellai, is located at the southernmost tip of Deccan Plateau. The average temperature ranges from 25-41 degree Celsius in summer month and 18-29 degree Celsius during rest of the year.

As of 2011 census of India, Tirunelveli has a population ratio of 49% males and 51% females. It has an average literacy rate of 78%, higher than that of the national average of 59.5%. Here 10% of population is under 6 years of age. The vast population is poor and reside in the rural area with limited access to infrastructure including comprehensive medical care.

Health indicators inTirunelveli are among the lowest in South East Asia and communicable diseases are significant component of the major health problems, the recent outbreak of dengue was a major threat to the health system.

Recent data on the prevalence of skin infections in Tirunelveliare limited. I was able to identify only four studies regarding the dermatological infections especially fungal infectons in Tirunelveli district.

MATERIALS AND METHODS

We have designed a prospective clinical study involving children below 14 years during a period from July to August 2012.

The study involves children who are attending the outpatient department of Dermatology and Paediatrics, Tirunelveli Medical college and hospital(TVMCH)with the signs and symptoms suggestive of skin infections.

Dermatological examination was conducted for children below 14 years of age group. Examination was conducted at the OPD of Dermatology and Paediatrics at TVMCH.

The parents of patients provided oral consent prior to being examined for various skin infections. The team conducting examinations applied common case definitions based on WHO's exisiting definition. For clinical diagnosis, microbiological investigations were used for scabies, bacterial and fungal infections if necessary. Photographs to record the disease was also taken with consent asand when necessary.

Approval for undertaking the study was given by Tirunelveli Medical College and Hospital. Institutional Ethical Committee, TVMCH approved the study protocol.

RESULT

A total of 200 and 6025 children have attended the dermatology and paediatrics OPD respectively. Out of the total population, male children constitutes 108 (5.53%) & 3003 (49.81%) and female children constitutes 96 (4.92%) & 3025 (50.18%) respectively.

Among the total cases, 59 in no, (54.63%) males and 51 (53.12%) females reported with skin infections to the dermatology OPD. Whereas 10 (0.33%) males and 12 (0.39%) females presented with skin infections to the paediatric OPD. In short, about 54.5% of the total population in Dermatology OPD and only 0.38% of the total population in paediatrics is presented with cutaneous infections.

Bacterial infections 67 cases, (51.14%) especially impetigo appears to be the most prevalent in the age group less than 14. Among that, a high prevalence of pyodermas are seen in the age group below 5 years. 36 cases, (27.2)

Following this, parasitic infestations also constitute a major burden of diseases in children. It contributes to about 33.58% of the total infections. It is widely prevalent among the children if age group 10-14 years 20 in no, (15.15%) as it is mainly spread via contact.

Fungal and viral infections formed the minority groups in which fungal infections constitutes only 12.97% and viral infections constituting only about 2.29% of the total no. of infections. Majority of the fungal infection are located at the age group above 10 years whereas viral Infections are common above the age group of 5 years. It is rarely seen below 5 years.

Age group less than 5 years shows highest prevalence of bacterial infections like pyodermas (27.2%) whereas that between 10 to 14 years shows a higher prevalence of parasitic infestations especially scabies. The age group between 10-14 years shows a spike of both bacterial and parasitic infestations.

Even though gram positive organisms the primary causative organisms of pyoderms, Klebsiellaoxytoca had been demonstrated from the pus culture of a person Living with HIV AIDS patient.

It points to the fact that Gram negative organisms can also be the causative agents.

DISCUSSION

From our study, we have found that out of the total population that have attended the dermatology OPD, 54.5% of children presented with cutaneous infections. On of other hand, only 0.38% of the total population presented with skin infections to the paediatric OPD.

Out of the total population screened, bacterial infection appears to be the most prevalent infection reporting to the OPD. The increased incidence of pyodermas are seen particularly in the age group less than 5 years of age.

Staphylococcus aureus and Group A Streptococcus are the commonest microorganisms that are being isolated from both primary and secondary pyodermas. The infecting strain of Staph aureus is usually present in the nares and the perineum. From the site of inoculation, the infection is disseminated by fingers and clothing, which may determine the distribution of lesion. Malnutrition is an important predisposing condition in developing countries, along with other factors such as lack of personal hygiene. [3].

Group A streptococcus is bacterium responsible for variety of conditions ranging from mid superficial infections to life threatening systemic infections. Worldwide, the highest incidence of Group A streptococcus infection occurs in countries with warmer climate where overcrowding and lack of personal hygiene persists.[2]

Erysipelas like infection and cellulitis due to streptococcus pneunoniae, gram negative organisms like pseudomonas aeroginosa and Campylobactorjejuni have been reported mostly in the immune compromised.

Following this, parasitic infestations [table 3] also constitutes a major burden of diseases in children. It contributes about 33.58% of the total infections. It is widely prevalent among children of age group 10 to 14 years as it is mainly spread by contact.

Despite the high frequency of diagnosis, it is likely to be an underestimation of the true burden of skin infections and in particular, scabies infestation in our community. Scabies is a parasitic infestation caused by the parasite sarcoptesscabeivarhominis, which is spread by contaminated individuals. The mite burrows the skin and lays eggs, eggs hatch and intense itching pursues where the nymph crawls. The outbreak is commonly associated with overcrowding living arrangements and lack of access to water. [4]

The high prevalence of people infected with scabies is likely to be an important contributing factor to the corresponding high proportion of pyoderma observed, particularly among young children. The repeated scratching caused by scabies can result in breaks in the skin which in turn facilitates bacterial infections.

Fungal and viral infections account for the minority groups of infections in the children below 14 years of age group. Fungal Infections carries about 12.97% of the total population. Three fungal genera – Trichophyton, Microsporum and Epidermophyton- account for the vast majority of dermatophytosis. Fungal reservoirs for these organisms include soil, animals, and infected humans. They have a very high affinity for keratinized tissue, such as the skin, nails and hair. Trichophytonrubrum is the most common dermatophyte worldwide [5].

Candidiasis refers to a diverse group of Infections caused by candida albicans or by other members of the genus candida. These organisms typically infect the skin, nails, mucous membranes, and gastrointestinal tract, but they also cause systemic disease. Infection is common in immune compromised patients, diabetics, the elderly, and patient's receiving antibiotics.

Candida albicans accounts for 70% to 80% of all candida infections. C. albicans commonly resides on skin and mucosal surfaces. Alterations in the host environment can lead to its proliferation and subsequent skin disease. Candidalintertrigo is a specific infection of the skin folds (axillae, groin), characterized by reddened plaques, often with satellite pustules. Thrush - oropharyngeal candidiasis, characterized by white nonadherent plaques on the tongue.

Tineaversicolor is a common opportunistic superficial infection of the skin caused by the ubiquitous yeast malassezia furfur. Prevalence is high in hot, humid climates M. furfur may filter the rays of the sun and also produces phenolic compounds that inhibit tyrosinase, which can produce hypopigmentation in many patients.[7].

Viral infections (2.29%) like varicella, herpes zoster are less likely to occur in children. Warts are common and benign epithelial growths caused by human papillomavirus (HPV). Warts affect approximately 10% of the population. HPV infection follows inoculation of the virus into the epidermis through direct contact, usually facilitated by a break in the skin.

Molluscumcontagiousum is an infectious viral disease of the skin caused by the infection is common in children especially those with atopic dermatitis, sexually active adults, and patients with human immunodeficiency virus (HIV) infection. Transmission can occur via direct skin or mucous membrane contact, or via fomites [8].

Analysis of the results revealed that four major causes for the prevalence of skin infections are: *spread from one another, *low awareness, *poor personal hygiene, *and overall social developmental issues.

CONCLUSION:

In my study, it has been found that, the majority (54.5%) of the under 14 population reporting to the OPD presents with cutaneous infections. The prevalence rates shows that the increased magnitude of bacterial infections is the prevailing trend in the population under 5 years of age.

On the other hand, parasitic infestations spikes at the age group above 14. The age group between5 to 10 shows an increasing prevalence of both.

There are successful disease control programmes in places within the country and it is hoped for a general health programme that could increase the awareness among the people regarding the need of personal hygiene and other socioeconomic factors in order to maximize the health benefits DVL.

Figure:1 Impetigo

Figure:2 Molluscum Contagiosum

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