

## CLINICAL PATTERN OF BACTERIAL SKIN INFECTIONS AMONG PRESCHOOL CHILDREN IN A TERTIARY CARE CENTRE IN NORTH EAST INDIA

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### ABSTRACT

#### BACKGROUND

Skin diseases are common all over the world. Their pattern and prevalence however vary between countries and various regions of the same country due to varying ecological factors. In India, skin infections constitute a large percentage of skin diseases, among which pyodermas take a very prominent place.

Aim- The present study was conducted to document prevalence and the type of bacterial skin disorders among the preschool age group children (2 - 5 years of age), attending Dermatology OPD in a tertiary care centre in north east India during the tenure period from July 2017 to June 2018.

#### MATERIALS AND METHODS

First 150 cases of clinically diagnosed primary pyodermas among preschool children (2 - 5 yrs.), who presented to the outpatient clinic of dermatology Department between July 2017 and June 2018 were included in the study. Skin diagnosis was made clinically and laboratory investigations including culture were sent according to necessity.

#### RESULTS

In this study, out of 150 patients, the most common infection was impetigo followed by perioritis, folliculitis, furuncle, ecthyma and cellulitis. Prevalence in males were more than in females. Maximum number of cases were seen during summer season and among the lower socio-economic group. Maximum number of bacterial isolates was of Staph. aureus.

#### CONCLUSION

Bacterial skin infections are common among preschool children. Hot humid climate, overcrowding and poor hygiene may explain the high prevalence of infections.

#### KEY WORDS

Preschool Children, Primary Pyoderma, Predisposing Factors.

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#### BACKGROUND

Skin diseases are a major cause of morbidity in paediatric population. They account for 30% of all outpatient visits to a paediatric clinic and 30% of all visits to a dermatologist.<sup>1</sup> Pyodermas are quite common in India and constitute a major portion of the cases in dermatology clinics, especially in the paediatric age group.<sup>2</sup>

Various factors like poverty, malnutrition, overcrowding and poor hygiene have been stated to be responsible for its higher incidence in the lower socio-economic strata. Climatic conditions also play a role with the hot and rainy seasons being the period of maximum occurrence.<sup>3</sup> This study was an attempt to understand the clinical pattern of pyoderma in preschool children.

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#### MATERIALS AND METHODS

A descriptive study of primary pyodermas was carried out among the preschool children (2 - 5 yrs.)<sup>4</sup> from July 2017 to June 2018 in Department of Dermatology, Silchar Medical College, Assam. The study was conducted after getting clearance from Institutional Ethical Committee.

#### Inclusion Criteria

Patients having typical morphological lesions of primary pyoderma and children whose parents/ guardians gave informed consent.

#### Exclusion Criteria

Children suffering from secondary bacterial infection over pre-existing dermatoses, children who had received prior topical or systemic treatment for the presenting skin lesions and cases whose parents refused consent.

A detailed history was taken, and a specific enquiry was made into the socioeconomic status, level of personal hygiene, overcrowded living condition, seasonal variation and past history of similar skin problem or any family history of similar illness. General physical examination with special emphasis to detect anaemia, malnutrition and lymph node involvement was done along with systemic examination. Cutaneous examination consisted of examining the morphology of the lesions, their distribution and associated discharge, crusting or scaling. Relevant investigations were sent where necessary.

**RESULTS**

Out of 150 cases of primary pyodermas, impetigo is the most common infection found and constitute 76 cases (50.6%) followed by periporitis (37 cases, 24.6%), folliculitis (27 cases, 18%), furuncle (6 cases, 4%), ecthyma (3 cases, 2%), cellulitis (1 case, 0.6%) respectively.

Clinical Type	No. of Cases	Percentage
Impetigo	76	50.6%
Periporitis	37	24.6%
Folliculitis	27	18%
Furuncle	6	4%
Ecthyma	3	2%
Cellulitis	1	0.6%

**Table 1**

We also correlated the relationship between pyoderma and sex. Prevalence rate in male was higher (98 cases, 65.3%) as compared to female (52 cases, 34.6%).

The maximum number of cases came during the summer season, July and August has the highest number of cases. Most of the children were from lower socio-economic status (75%). History of overcrowding was present in 40% of cases, while 60% of cases had poor level of personal hygiene.

32% cases gave family history of concomitant pyoderma infection in a sibling and 27% children had the history of recurrent pyoderma, more in summer. Impetigo and periporitis mostly occurred on face and neck and folliculitis was seen mostly on scalp.

Staphylococcus aureus (67.33%) constitute highest number among the bacterial isolates followed by  $\beta$  haemolytic streptococci (22.6%) and mixed infections (10%).



**Figure 1. Impetigo affecting Face and Neck**



**Figure 2. Folliculitis affecting Leg**

**DISCUSSION**

Infective conditions, especially bacterial skin infections, constitute a large number of cases seen in dermatological practice.<sup>5</sup> Most of pyoderma cases in this study came during hot and rainy seasons, as conditions during this period including microtrauma caused by biting insects predispose the susceptible children to these infections. In studies done by Kakar et al<sup>6</sup> and Bist et al,<sup>7</sup> maximum number of cases are found during hot and rainy seasons.

In our study, we find that most of the children are from lower socio-economic class and with poor personal hygiene. The children of this age group are exposed to unhygienic condition when left under improper supervision by parents who are working during the day as labourers.<sup>8</sup> Similarly, sub-optimal hygienic conditions, overcrowding and close contact leading to spread of pyodermas have also been well documented.<sup>6,9</sup> Like most of the earlier documented studies,<sup>6,10,11</sup> we also recorded a higher incidence in boys.

Impetigo was the most common pyoderma noticed by us, which is in accordance of other paediatric studies.<sup>2,3,6,7,9,11,12</sup>

In some of the previous studies extremities were the predominant site of involvement<sup>12,5</sup>; however, predominant involvement of face followed by neck and scalp observed in the present study is in agreement of others.<sup>3,6</sup> Carrier sites like nose and throat in close vicinity may be held responsible for the increased incidence. Maximum number of bacterial isolates were Staph. aureus followed by  $\beta$  haemolytic streptococci. Previous studies have also shown similar preponderance of Staph. aureus among other bacterial isolates.<sup>5,6,9</sup>

**CONCLUSION**

Pyoderma cause significant morbidity in children. Environmental, socio-economic and nutritional factors may have a compounding effect on development of pyoderma in children. Proper sanitation, good hygiene, improving the nutritional status and creating health awareness can prevent infection.

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