

Study of Prevalence of Paediatric Skin Diseases in a Tertiary Care Hospital of Central India

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ABSTRACT

BACKGROUND: - Skin disorders in pediatric age is a major public health issue worldwide. Adult dermatoses differ significantly from dermatoses in pediatric age group in clinically, treatment and prognosis. Due to environmental variabilities, hygiene standards, social practices, and inheritance, skin problems vary from one place to another.

OBJECTIVES: Evaluating the prevalence of dermatosis in children of various age, as well as to correlate the prevalence of dermatosis in male and female pediatric patients.

METHODS:-This is cross-sectional observational study that will be done at JNMC and AVBRH Sawangi (Meghe), Wardha. Over the course of a year, from November 2020 to October 2021, 570 patients aged 0 to 18 would be enrolled. Newborns i.e. birth - 1 month, Infants i.e. 1 month - 1 year, Toddlers i.e. 1 – 3 years, Pre-school children i.e. 3 – 6 years, School-age children i.e. 6 – 12 years, and Adolescents i.e. 12 - 18 years would be separated into six groups. All findings will be recorded into a pre-designed proforma for data analysis and interpretation, and the diagnosis will be established on the basis of relevant comprehensive data, clinical aspects, and investigations.

RESULTS: Goals monitoring will be done for which table will be formed to analyze subject to a statistical test to determine their significance.

CONCLUSIONS: The findings for the protocol research will be used to form the conclusions

Keywords: -Pediatric skin diseases, Tinea infection in pediatric age group, Prevalence of skin diseases, New born skin diseases, Preschool children skin diseases.

Introduction

Skin diseases in pediatric age group is one of the major health issues all over the world.⁽¹⁾ Pediatric age range from nativity to 18 years. Dermatology issue in pediatric age group is a specific sub specialty of dermatology that focuses with the diagnosis, treatment, and prevention of skin problems under the age group of 18 years.⁽²⁾ It deals with skin illnesses and skin health care in children uptill adolescence, in period where significant physical, mental and maturational changes takes place.⁽³⁾

Adult and paediatric dermatoses has significant differences in the view of clinical presentation, diagnosis, treatment, and prognosis. In pediatric age group, important cause of morbidity are skin diseases.⁽⁴⁾ Skin diseases varies from place to place due to environmental changes, hygienic standard, social customs and heredity.⁽⁵⁾

The epidemiological statistics are based on skin illness presentations in those children going to school in tertiary health care centre in India. Incidence and prevalence of skin illness have variable geographical statistics distinctive at urban and rural regions and also in mountain areas; moreover it changes with age and climate.

In many developing countries, diseases of the skin is one of the most recurring problem in school going children, hence they can be temporary or chronic and recurrent in children. In neonates, most of the dermatoses are physiological and transient.⁽⁶⁾ Some cases of neonatal dermatoses are related with hereditary factors. In school-based studies of different areas in India, the prevalence of dermatoses in pediatric age group ranged from 8.7% to 38.8%.⁽⁷⁾ Factors like socioeconomic status, dietary habits, seasonal variation, and cultures, influences the skin in children. These factors are related with significant morbidity.⁽⁸⁾

Due to more sensitive nature of the skin of newborns and children, and repeated exposure to injury; infections and allergic reaction attributes to the most skin diseases in

childhood.⁽⁹⁾ Seasonal variation plays an important role in various diseases and their manifestation.⁽¹⁰⁾ Children are at risk of spillover of communicable skin diseases among themselves and their families.

During school going years, cutaneous infections are common. Most of which results from intrinsic genetic abnormalities, nutritional deficiency and hampered immunity.⁽¹¹⁾

Illiteracy, backwardness, scarcity of medical services, poor sanitation, excess pollution, and overcrowding in rural and urban areas of developing nations like India, lead to an increase in the frequency of infectious illnesses.⁽¹²⁾

Paediatrician examines 30% of patients with skin disorders in general OPD, while dermatologists examine 30% cases of paediatric dermatoses attending skin OPD.⁽¹³⁾

Rationale of the study

This study will help in identifying most common diseases and factors that contributes to skin diseases that create big impact on mental and physical health of growing child.

Aim and objective

Aim

To find out how common dermatoses are in children of different age group.

Objectives

- 1) To determining the prevalence of dermatosis in pediatric age group.
- 2) To correlate prevalence of dermatosis in male and female in the pediatric population.

Materials & methods

Study Participants

The present study includes 570 cases both male and female, with age < 18 years in outpatient department of dermatology, venereology and leprosy at AVBRH, sawangi.

Study design

Cross sectional observational study

Study Period

The research will take place over the course of a year (November 2020 to October 2021).

Eligibility Criteria

INCLUSION CRITERIA

- a) All paediatric patients attending dermatology OPD.
- b) Patients who are clinically diagnosed.
- c) Parents who agree to participate in the research.

EXCLUSION CRITERIA

- a) Patients above the age of 18.
- b) Children who refuse to cooperate.

Sample Size⁽¹⁴⁾

Formula for Cochran Sample Size with Desired Margin Error:

$$n_0 = \frac{Z^2 pq}{e^2}$$

Where,

The level of significance at 5% is $Z_{\alpha/2}$, i.e. the 95 percent confidence interval is 1.96.

$p = \text{Incidence} = 38.8\% = 0.388$

$d = \text{Desired Margin Error} = 4\% = 0.04$

$$n = \frac{1.96^2 * 0.388 * (1-0.388)}{0.04^2}$$

$$= 570.12$$

Hence, $n = 570$ children needed in this study

Methodology

A cross-sectional observational research will be conducted in the Dept. of Dermatology at JNMC and AVBRH Sawangi (Meghe) Wardha. This research will include 570 patients aged 0

to 18 years at OPD of dermatology dept. in AVBRH SAWANGI. It will take place over the course of a year, from November 2020 to October 2021. Patients will be divided into six categories based on their age groups:

Group I. Newborn i.e. Birth - 1 month

Group II. Infant i.e. 1 month – 1 year

Group III. Toddler i.e. 1 – 3 years

Group IV. Pre - school children i.e. 3 - 6 years

Group V. School going children i.e. 6 - 12 years

Group VI. Adolescent's i.e. 12 - 18 years

Grp I - VI are the designations for the various groupings. The parents of each patient included in the research will be asked for their consent. Appropriate detailed data (i.e. age, sex, family and personal history etc.) will be collected. Basic laboratory investigations such as CBC, liver function test, renal function test, RBS, electrolyte serum levels, urine routine test, fungal skin scraping, dermoscopy, wood light examination, radiological examination, direct fungal microscopy, punch biopsy, prick test, and patch test will be used to confirm the diagnosis of skin diseases based on clinical presentations. For data analysis and interpretation, all findings will be entered in a pre-designed proforma.

Skin diseases are evaluated under 19 disease subgroups :- Infectious diseases, Eczematous diseases, Papulosquamous diseases, Vesiculobullous diseases, Skin appendages (sweat and sebaceous gland), Nutritional diseases, Nevoid and developmental lesions, Keratinization diseases, Hypersensitivity diseases, Genodermatoses, Tumor / cyst, Connective tissue / collagen vascular diseases, Pigmentary disorders, Hair diseases, Nail diseases, Photo dermatoses, Vascular malformations, Xerosis cutis, Others - unclassified. These subgroups are divided into the subgroups involving 100 skin diseases.

Statistical method

Statistical method: - Krushkal Wallis and Wilcoxon Rank Sum Test

Software used: SPSS 27.0.version, Graph Pad prism 7.0.version.

Level of significance= 5%

Power of test= 80%

Scope

The following study will help in identifying the prevalence of specific dermatosis in paediatric age group which will help in taking the preventive measures. Awareness programme can be started for the public at large.

Limitation

The limitation of our study is that it is a single centre study on patients attending dermatology OPD at a tertiary hospital. The sample size is small. Large scale multicentric study with more sample size is needed for epidemiologic classification of paediatric skin diseases.

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