Indian Journal of Basic and Applied Medical Research; December 2020: Vol.-10, Issue- 1, P.293 - 298
DOI: 10.36848/IJBAMR/2020/16215.55765

Original article:

Study of clinical profile of different dermatological lesions during neonatal period at tertiary care hospital

***DR Bhushan Deo , **Dr Motilal Tayade , *Dr Santosh Reddy**

*Department of Pediatrics and **Department of Physiology
Rural Medical College, PIMS (DU) , Loni
Corresponding author**

Abstract:

Introduction: The neonatal period is regarded as first 4 weeks of extrauterine life. The transition of neonatal skin from an aqueous to an air-dominant environment results in various changes, both physiological and pathological. Skin, oral mucosa, genitalia, hair, and nails have been found to be affected nearly universally in up to 99.3% neonates.

Methodology: In our present study, 350 neonates were included. The data was tabulated in MS Excel sheet and statistical analysis was done using SPSS software (IBM SPSS Statistics version 22, SPSS, Inc. , Chicago, IL, USA) and MS – Excel 2007 Version (Microsoft)

Results and Conclusion: In our present study, among neonatal factors, incidence of neonatal dermatoses was found to be more among males, term babies and in those with weight ≥2. 5kg and this difference was found to be statistically significant. Our study shows that infections and infestation disorders were more common in the pediatric age group that can be controlled easily by public awareness, proper sanitation and providing health care facilities by training the dermatologists, pediatricians and general practitioners about the management of common skin disorders.

Keywords: Dermatological lesions , neonatal period

Introduction:

The neonatal period is regarded as first 4 weeks of extrauterine life. The transition of neonatal skin from an aqueous to an air-dominant environment results in various changes, both physiological and pathological. Skin, oral mucosa, genitalia, hair, and nails have been found to be affected nearly universally in up to 99.3% neonates.[1] The physiological changes are usually transient and limited to the first several days or weeks of life unlike pathological changes.[2] Various maternal factors such as age, maternal illnesses during pregnancy, and mode of delivery also contribute to cutaneous findings in neonates.[3]

Neonatal skin differs in structure and function from that of adults and hence the dermatoses seen during this period differ in their clinical presentation and therapeutic requirements. The skin of neonate is thinner, delicate, has weaker intercellular attachments and produces fewer sweat and sebaceous gland secretions and is more susceptible to several infections.[4] Neonatal skin plays an significant role with vernix caseosa through their antimicrobial properties to protect the neonate in utero and after birth. The skin is the most visible and easily accessible organ of the body. It serves many purposes, acting as a barrier against infection, protecting internal organs, contributing to thermoregulation, storing insulating fats, excreting electrolytes and providing tactile sensory input.[1]

Material and methods:

STUDY DESIGN-Descriptive cross sectional study.

SAMPLE SIZE-256.

INCLUSION CRITERIA

1. All the neonates (Inborn/outborn) in PRH with dermatological conditions.
2. Patient parents who are willing to give informed written consent.

EXCLUSION CRITERIA

1. The neonates without dermatological manifestation.
2. Critically sick neonates on ventilator.
3. Neonates above 28 days of life.
4. Neonates born to mothers with a history of drug and alcohol abuse .

In our present study, 350 neonates were included. The data was tabulated in MS Excel sheet and statistical analysis was done using SPSS software (IBM SPSS Statistics version 22, SPSS, Inc. , Chicago, IL, USA) and MS – Excel 2007 Version (Microsoft)

Results:

Table 1) Distribution of neonates on the basis of Inborn / Outborn

	Number of patients	**Percentage**
Inborn	276	79
Outborn	74	21
Total	350	100

Table 2) Distribution of C/NC

C/NC	**Number of neonates**	**Percentage**
Consaguinous	41	12
Non consaguinous	309	88
Total	350	100

Table 3) Results of Transient Physiological skin manifestations of neonates in present study

Transient Physiological lesions	**Number of neonates**
CM	9
EP	43
ETN	38
HCC	6
M	56
Mr	6
NA	25
SB	3

SGH	13
TNPM	13
MS	24
Total patients	236 (67.42%)

Table 4) Genodermatosis/heritable disorders results of neonates in present study

Genodermatosis/heritable disorders	Number of neonates
CALM	13
CB	7
EB	4
OCA	2
P	1

Table 5) Infection results of neonates in present study

Infections	Number of neonates	Percentage
Oral candidiasis	19	30
Sclerama neonatarum	15	24
Diaper dermatitis	13	21
Omphalitis	12	19
Mastitis	4	6
Total	63	100

Table 6) Cutaneous complications because of interventions in NICU in present study

Cutaneous complications	Number of neonates
BBS	2
Extravescetion injuries	
Abscess	6
Thrombophlebitis	2
Gangrene	2
Skin abrasions	12

Table 7) Association between Major illness in acquired skin lesions in neonates.

Major illness	Number of neonates
Aspiration pnemonia	1
Congenital pnemonia	10
Early onset septicaemia	13
HIE	4
Hyperbilirubinemia	1
Hypoglycemia	1
Late onset septicaemia	7
MAS	7
MSL	1
RDS with EOS	3
SGA	1
VSD	1
Total	6

In our present study, maximum neonates were with EOS & Congenital pneumonia.

Table 8: Laboratory Investigations analysis in Neonates with pathological skin lesions

Laboratory Investigations	Mean	SD	Remark
HB	16. 38	3. 12	------
TLC	17, 378	8122	Increased
N	66. 29	5. 78	------
L	29. 03	12. 36	Increased
PC	194. 56	84. 21	Increased

In our present study, we found there is increased in TLC, Lymphocyte count and PC.

Table 9) Associated CRP in acquired skin lesions in neonates in present study

CRP	Number of neonates	Percentage
Positive	47	51.7
Negative	40	48.3
Total	87	100

Cutaneous lesions are not uncommon among neonatal age group. Many studies have been conducted to evaluate the incidence and profile of neonatal dermatoses. [1- 4]

Discussion:

Skin diseases are a major health problem in the neonatal age group and are associated with significant morbidity. Skin diseases in the neonatal age group can be transitory or chronic and recurrent. Most of the cutaneous diseases that result from intrinsic genetic abnormalities also have onset in the pediatric age group. [2]

In our present study, 350 neonates were included. The data was tabulated in MS Excel sheet and statistical analysis was done using SPSS software (IBM SPSS Statistics version 22, SPSS, Inc. , Chicago, IL, USA) and MS – Excel 2007 Version (Microsoft) In our present study 53 % neonates were male while 47% neonates were female. Jitendra Sing et al study (2015) of 234 patients 58.9% were males. While in Debdeep Mitra et al (2019) study , of these, 177 (54%) were males and 150 (46%) were females. [2, 4]

In our present study maximum neonates (91. 22 %) were term neonates. In other studies , Jawade et al found 72. 22% neonates were term neonates. [2] In our present study 46% neonates were in 2 – 2.50 kg range of birth weight while only 4% neonates were with more than 3 kg birth weight. In our present study maximum dermatosis were observed in neonates on 1st day of life (38%). In the study by Jawade et al ,only 8%neonates on day 1 of life had dermatosis. [2] In our study the congenital disorders also included they were observed at birth. In our present study 92% mothers were in range of 20 -30 years, while mean age was 24.45 years. Similar age group was observed in Jitendra et al study [3] , Sugat Jawade et al study(2) , seen 87% and 91% respectively in similar age group. In our present study maximum mothers were Primi (88) while minimum mothers were P4 and P5 . Similar results were found in other studies . [2, 4]

In our present study in 54 % mothers were with normal delivery while 46% mothers were with LSCS mode of delivery. In our present study , 88% neonates were with non consaguinous while only 12% neonates were with consaguinous. In our present study 79 % neonates were inborn while 21% neonates were outborn. In our present study, maximum neonates were with EOS & Congenital pneumonia. In our present study 75% neonates were with positive CRP. In our present study 32% neonates were with negative results while in 30% neonates we found staph. Aureus. Positive. In our present study in 93% patients no cutaneous complications were detected while only in 3% skin erosion & in 3% other complications were detected. In our present study in 72% neonates found Transient Physiological lesions. Sugat Jawade et al (2015) found , majority of the skin conditions in neonates were transient (physiological) and constituted 39.69% followed by dermatitis (20.61%), infectious disorders (20.61%) and congenital pigmentary disorders (16.03%) in decreasing order. [2]

Dermatological emergencies are primarily divided into primary cutaneous emergency, where skin is the primary target, and secondary cutaneous emergency, where skin is affected secondary to a systemic medical or surgical involvement. In both the cases, however, acute skin failure is the end result that lands the patient in the emergency department. [5]

Therefore, as a doctor, knowing the dermatological, pathological and non-pathological common skin rashes guides the family in the right direction, offers advice to reduce uncertainty and time for the treatment of severe conditions and builds a confidential doctor-patient relationship. [6,7,8] The study shows that infections and infestation disorders were more common in the pediatric age group that can be controlled easily by public awareness, proper sanitation and providing health care facilities by training the dermatologists, pediatricians and general practitioners about the management of common skin disorders. But many non-infectious disorders that

need dermatologist's opinion should be referred to them. Due to wide variety, burden and public health problem of skin diseases in children, more dermatologists should be trained in pediatric dermatology subspecialty.

Conclusion:

In our present study, among neonatal factors, incidence of neonatal dermatoses was found to be more among males, term babies and in those with weight ≥2. 5kg and this difference was found to be statistically significant. Among maternal factors, incidence of neonatal dermatoses was found to be more among multipara mothers, mothers in the age group of 20-30 years and neonates born via normal vaginal delivery which was statistically significant. Our study shows that infections and infestation disorders were more common in the pediatric age group that can be controlled easily by public awareness, proper sanitation and providing health care facilities by training the dermatologists, pediatricians and general practitioners about the management of common skin disorders.

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Date of Submission: 19 October 2020
Date of Acceptance: 8 November 2020
Date of Publishing: 15 December 2020
Author Declaration: Source of support: Nil, Conflict of interest: Nil
Ethics Committee Approval obtained for this study? YES
Was informed consent obtained from the subjects involved in the study? YES
Plagiarism Checked: Urkund Software

DOI: 10.36848/IJBAMR/2020/16215.55765