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Original Research Article

# Neonatal dermatoses in a tertiary care center

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ABSTRACT

Dermatoses in neonatal period is very common and important cause of parental anxiety seeking dermatologist or paediatric consultation. To study the clinical profile of neonatal dermatoses in a tertiary care centerm A cross-sectional study on cutaneous lesions in 200 newborns was conducted from October 2016 to September 2018 in the department of dermatology at KIMS Hospital, Narketpally. Male: Female ratio of skin lesions was 1.22:1. Physiological skin lesions were seen in 186 babies followed by pathological skin lesions in 44 babies. Mongolian spot (93%), physiological scaling (83%), were commonest physiological skin lesions seen in the study. Pathological lesions were seen among 73(36.5%) babies.



## 1. Introduction

Neonatal period is generally regarded as the first 4 weeks of extra uterine life.[1,2] Dermatoses in neonatal period is very common and important cause of parental anxiety seeking dermatologist or paediatric consultation.[3]

Variety of lesions which may be physiological or pathological may be present during the neonatal period.

### *1.1. Dermatoses of the newborn can be classified as:[1]*

Physiological skin changes, Transient non infective conditions

Birth marks, Others

### *1.2. Examples of Physiological skin changes:[1]*

Vernix caseosa, Physiolohical scaling, Milia,Epstein pearls, Hypertrichosis, Cutis marmorata, Mongolian spot

### *1.3. Examples of Transient non infective conditions:[1]*

Erythema toxicum neonatorum, Miliria crystalline, Eosiniphilic pustulosis

### *1.4. Examples of Birth marks:[1]*

VASCULAR-Salmon patch, Haemangioma

PIGMENTARY- Congenital, melanocytic nevi, Café-au-lait macules

### *1.5. Examples of Other new born dermatoses are:[1]*

Accessory tragus, Anal polyp, Preauricular sinus, Waardenburg syndrome, Aplasia cutis congenital

However, it is important to identify and diagnose them correctly so as to avoid unnecessary diagnostic or therapeutic interventions.[2] Few lesions can be cutaneous manifestation of potentially fatal systemic condition, so early diagnosis of pathological neonatal dermatoses helps in initiating early specific therapy.[3]

## 2. Aims

To study neonatal dermatoses in a tertiary care center.

## 3. Objectives

1. To study the clinical profile of various neonatal dermatoses

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2. To study the sex wise frequency of physiological skin Findings in neonates
3. To study the sex wise frequency of pathological skin findings in neonates

## 4. Material and Methods

### *4.1. Place of study*

Post partum ward of Department of Obstetrics and Gynecology, neonatal intensive care unit, dermatology out patient department and paediatric out patient department of KIMS Hospital, Narketpally.

### *4.2. Type of study*

Cross sectional study.

### *4.3. Sample size*

200

### *4.4. Study Duration*

Years (October 2016-September2018

### *4.5. Inclusion and exclusion criteria*

### *4.6. Inclusion criteria*

1. Neonates who were delivered in Obstetrics and Gynecology department.
2. Neonates admitted into the NICU(Neonatal intensive care unit).
3. Neonates attending Dermatology out patient department.
4. Neonates attending Paediatric out patient department of KIMS, Narketpally having cutaneous lesions criteria

### *4.7. Exclusion criteria*

1. Neonates who were severly sick with sepsis
2. Neonates under mechanical ventilation

### *4.8. Ethics Approval*

1. The study has been approved by Institutional Ethics Committee, KIMS, Narketpally.
2. Consent has been taken from parents or guardians of neonates before examination.

## 5. Procedure of data collection

Each newborn will be fully undressed to facilitate the examination of the entire skin surface including the nails, hair, scalp, genitalia and oral cavity. Relevant data will be noted during the time of examination.

This includes - Baby's gender, Mode of delivery, Birth weight, Gestational age, Parity of mother, History of consanguinity

## 6. Study Instruments

Venous blood samples will be taken from cases after taking consent for measurement of following investigations wherever required:

1. Complete haemogram
2. Routine biochemical investigations
3. Pus for Gram stain, culture and sensitivity wherever required
4. KOH for fungal infections
5. Tzanck smears for vesiculobullous lesions wherever required
6. Skin biopsy wherever required
7. USG wherever required

### *6.1. Data Analysis*

The birth history and relevant maternal history will be recorded in a proforma. Photographic records will be maintained. The relationships between the occurrence of the lesions with the various maternal and neonatal factors will be analyzed. The statistical significance of the associations will be done by using chi-square test and with $P \leq 0.05$ being considered as statistically significant.

## 7. Observations

A hospital based, cross-sectional study on cutaneous lesions in 200 newborns was conducted from October 2016 to September 2018.

### *7.1. Sex wise distribution of subjects*

Out of 200 male were 110(55%) and female were 90 (45%) There is an almost equal sex distribution.

### *7.2. Distribution according to gestational age*

Majority of cases 173(86.5%) were born at Term gestation, preterm gestation cases were 17(8.5%), post term cases were 10 (5%).

### *7.3. Distribution according to birth weight*

Majority of subjects 177(88.5%) are having normal birth weight. Low birth weight cases were 33(11.5%)

### *7.4. Distribution according to consanguinity*

Majority of subjects 162 (82%) are born out of Non consaguineous marriage. 34(18%) cases born out of consaguineous marriage

### 7.5. Distribution according to mode of delivery

Majority of subjects(68.5%) were delivered through lower segment caesarean section. normal vaginal delivered cases were 56(28%), other (foreceps delivery) are 7(3.5%) in number.

### 7.6. Distribution According To Parity

Majority of cases 105(52.5%) are Primigravidae. remainig are 95(47.5%) multigravidae.

### 7.7. Distribution according to pattern of skin lesions

Majority of cutaneous lesions 388(84%) were physiological followed by transient skin lesions 43(9.3%) and others (Iatrogenic and genetic skin lesions) are 31 (6.7%)

## 8. Discussion

Cutaneous lesions are not uncommon among neonates. Several studies about the prevalence of neonatal dermatoses have been documented in various countries and racial groups.

In our study all live births born in the Obstetrics and Gynaecology ward were observed for the physiological conditions as well as pathological conditions.

The Literature reported that The prevalence of neonatal dermatoses was between 57% and 99.3%.

Out of 200 neonates in the study, 110 were males and 90 were female which correlates well with a study done by Zagne et al.[4] There was equal sex distribution in our study as compared to Dash et al[5] where there was an increased incidence in males.

Most of the mothers were in the age group of 20 and 29 years at the time of delivery similar to a study done by Sachdeva et al.[6]

Term babies were 86.5%, preterm babies were 8.5% and rest 5% were post term babies. Hirty four babies were born of consanguineous marriage.

### 8.1. Mongolian spot

These were noted in about 93% of neonates. However the incidence of Mongolian spots in our study in comparison with other studies is 60.2% by Sachdeva et al[6] & 89% by Dash et al.[5] Almost all cases of Mongolian spots were present on the lumbosacral region and buttocks which is comparable to a study done by Mishra et al. The colour varies from light blue to bluish green. Size was variable ranging from 5cm to 20cm. There was an equal sex distribution. There was no relation to maternal illness or mode of delivery similar to a study by Sachdeva et al.[6]

### 8.2. Physiological desquamation

Physiological desquamation is one of the common dermatological findings observed in our study. There were about 167cases noted. It is present at birth. The incidence of superficial cutaneous desquamation resembles closely those seen in studies by Baruah et al. Scales were easily removable, fine and thin on an erythematous base. Sites involved were trunk, extremities and ankle. It was more in term and post - term neonates. There was no sex predilection noted.

### 8.3. Milia

The overall frequency of Milia in this study is 11%. The incidence of milia is comparable to the incidence observed by Dash et al[5] in 13%.The frequency of milia has varied considerably in different studies, 44.2% in a study by Nobby et al and 94.8 % by Mishra et al. The usual size observed was that of a pinhead and the colour varied from white creamy to yellow. The most common sites involved were chin, cheeks, forehead.

### 8.4. Hypertrichosis

Hypertrichosis lanugosa was seen in 5.5%% of the cases in our study in contrast to Sachdeva et al[6] and Nobby et al who found 14.4% and 14.6% respectively. A higher incidence noted in babies weighing less than 2.5 kg may be due to its preponderance in preterm babies. The lower incidence in our study may be due to the lesser number of preterm babies.

### 8.5. Miniature puberty

Scrotal hyperpigmentation was seen in 1% neonates. There was no history of maternal illness or drug intake. It was speculated that differential activation of melanocytes may leads to the variation in genital hyper pigmentation. So, the important factors in determining genital pigmentation are racial factors and skin type.[6]

### 8.6. Erythema toxicum neonatorum (ETN)

Erythema toxicum neonatorum (ETN) was seen in 21.5%, similar to Dash et al and Sachdeva, et al.[6] Most of the babies were born at term which is in concurrence with other studies.[6,7] Most of the babies developed ETN on day 2 or 3. The sites of involvement of hemangioma were temporal area, scalp and feet. In our study the incidence of infantile hemangiomas was 1.5%.In other studies incidence ranged from 0.5% - 3%.[6,8] Hemangiomas were the most common anomaly and was the most common congenital tumor of infancy in our study and this also correlates with literature.[4]

**Table 1:** Skin lesions with respect to gestational age

| Skin lesions | Pre term(%) | Term(%) | Post term(%) |
|---|---|---|---|
| Mongolian spot | 16(3.4%) | 170(36.7%) | |
| Physiological scaling | | 161(34.6%) | 6((1.2%) |
| Milia | | 22(4.7%) | |
| Miniature puberty | | 2(0.4%) | |
| Hypertrichosis | | 6(1.2%) | 5(1.08%) |
| Erythema Toxicum neonatorum | 10(2.1%) | 33(7.1%) | |
| Impetigo | | 3(0.6%) | |
| Iatrogenic trauma | 5(1.08%) | 10(2.1%) | 1(0.2%) |
| Bullous aplasia cutis | | 1(0.2%) | |
| Irritant contact dermatitis | | 1(0.2%) | |
| Collodion baby | | 1(0.2%) | |
| Pyogenic granuloma | | 1(0.2%) | |
| Miliria crystalline | | 1(0.2%) | |
| Miliria pustulosa | | 1(0.2%) | |
| Capillary hemangioma | | 3((0.6%) | |
| Acrodermatitis enteropathica | 1(0.2%) | 1(0.2%) | |
| Cleft lip | | 1(0.2%) | |

Majority of skin lesions were observed in cases born at Term gestation(89.8%).

**Table 2:** Sex wise distribution of Physiological skin changes

| Skin lesions | Males(%) | Females(%) | Total |
|---|---|---|---|
| Mongolian spot | 96(51.7%) | 90(48.3%) | 186(48%) |
| Physiological scaling | 87(52%) | 80(48)%) | 167(43%) |
| Milia | 10(45.5%) | 12(54.5%) | 22(5.6%) |
| Miniature puberty | 2(100%) | - | 2(0.5%) |
| Hypertrichosis | 8(72.7%) | 3(27.3%) | 11(2.9%) |
| Total(%) | 203 | 185 | 388 |

There is an almost equal sex distribution

**Table 3:** Sex wise distribution of pathological skin lesions

| Skin lesions | Male(%) | Female(%) | Total(%) |
|---|---|---|---|
| Erythema toxicum neonatorum | 23(53.4%) | 20(46.6%) | 43(58.9%) |
| Impetigo | 1(33.4%) | 2(66.6%) | 3(4.1%) |
| Iatrogenic trauma | 10(62.5%) | 6(37.5%) | 16(21.9%) |
| Bullous aplasia cutis | 1(100%) | - | 1(1.3%) |
| Irritant contact dermatitis | 1(100%) | - | 1(1.3%) |
| Collodion baby | 1(100%) | - | 1(1.3%) |
| Pyogenic granuloma | 1(100%) | | 1(1.3%) |
| Miliria crysatllina | | 1(100%) | 1(1.3%) |
| Miliria pustulosa | 1(100%) | | 1(1.3%) |
| Capillary hemangioma | 1(33.3%) | 2(66.7%) | 3(4.1%) |
| Acrodermatitis enteropathica | 1(100%) | | 1(1.3%) |
| Cleft lip | 1(100%) | | 1(1.3) |
| Total(%) | 42(57.6%) | 31(42.4%) | 73 |

There is an almost equal sex distribution.

### *8.7. Impetigo*

Neonatal impetigo was present in 4.1% of our cases, which is more or less similar to an incidence of 1.2% by Nobby et al.[8] We found one case of aplasia cutis congenita, comparable to an earlier study from Pondicherry.[9] The baby had atrophic patches on the lower end of feet. Approximately 0.03 percent of newborns are afflicted with aplasia cutis congenita, or congenital absence of skin. The lesion is present at birth and may be ulcerated, bullous or atrophic in appearance. It is solitary in 70 percent of cases.

## 9. Source of Funding

None.

## 10. Conflict of Interest

None.

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## Author biography

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