*ejpmr, 2015,2(5), 1503-1510*

**SJIF Impact Factor 2.026**

**EUROPEAN JOURNAL OF PHARMACEUTICAL AND MEDICAL RESEARCH**

**www.ejpmr.com**

**Research Article**

**ISSN 3294-3211**

**EJPMR**

# A CLINICO-EPIDEMIOLOGICAL STUDY OF SKIN MANIFESTATIONS OF NEONATES IN COMPARISION TO OTHER INDIAN STUDIES.

**Dr. Sushma Chowdary Kosaraju*, Dr. Dilruba Begum M S[2], Dr. Subba Rao R[3]**

[*1]MD, Assistant Professor of Dermatology, NRI Medical College, Chinakakani, Mangalagiri Mandal, Guntur District, Andhra Pradesh, INDIA.

[2]MD, Senior Resident of dermatology, Konaseema Institute of Medical Sciences, Amalapuram, East Godavari Dt, AP

[3]MD, Professor & HOD of Dermatology, NRI Medical College, Chinakakani, Guntur Dt

**Article Received on 06/08/2015** **Article Revised on 27/08/2015** **Article Accepted on 18/09/2015**

***Correspondence for Author**

**Dr. Sushma Chowdary Kosaraju**

MD, Assistant Professor of Dermatology, NRI Medical College, Chinakakani, Mangalagiri Mandal, Guntur District, Andhra Pradesh, India.

## ABSTRACT

**Background:** The first four weeks of extra-uterine life is regarded as the neonatal period. Clinico-epidemiological data is limited for neonatal dermatosis in India. **Aim:** To ascertain the incidence of various cutaneous manifestations in the neonates delivered in our hospital and to determine the influence of various maternal and neonatal factors over these dermatoses. **Methods:** 100 newborns with cutaneous lesions were evaluated. The sex, birth weight, gestational age and age at the time of examination were recorded. In addition, age and parity of mother, mode of delivery were noted. **Results:** Neonatal dermatoses in the order of frequency in our study were Mongolian spots (71%), physiological scaling of the newborn(56%), milia (24%), erythema toxicum neonatorum (22%), sebaceous gland hyperplasia (21%), epstein's pearls (19%), physiological jaundice (9%), miliaria (8%), cradle cap (6%), lanugo hair (2%), vernix caseosa (2%), congenital melanocytic nevus(2%) and one case each of neonatal acne, transient neonatal pustular melanosis and café-au-lait macules. **Conclusion:** This study reflects the high incidence of cutaneous manifestations in neonates which correlates with previous Indian studies in neonatal dermatosis.

**KEYWORDS:** Neonatal dermatosis, Mongolian spots.

## INTRODUCTION

Neonatal dermatosis are extremely common and can be a significant source of parental concern. They include (1) transient and physiological cutaneous lesions, (2) birth marks, (3) infectious skin lesions, (4) congenital malformations of skin and (5) iatrogenic skin lesions. It is essential to rapidly and accurately establish the diagnosis of neonatal dermatosis in order to avoid unnecessary diagnostic or therapeutic procedures and concerns of parents. The literature is still lacking in large clinico-epidemiological studies.

## METHODS

100 randomly selected newborn with cutaneous lesions delivered in our hospital between May 2014 and May 2015 were included in this cross-sectional study. The observations were recorded in a preset proforma. Informed written consent was taken from mother. A detail history regarding sex, birth weight, gestational age and age at the time of examination were recorded. In addition, age and parity of mother, mode of delivery, history of maternal illness during pregnancy was noted. Relevant simple non-invasive investigations such as KOH scrapings for candidiasis, tzanck smear from vesicles, gram staining and bacterial culture of pustules were done to prove a given cutaneous manifestation. At the end of the study, the data was analysed, and inferences were drawn using various statistical methods.

## RESULTS

Of the 100 newborns, 51% newborns were males and 49% were females. The majority (i.e.88%) of newborns were examined within seven days of birth. 79% neonates were delivered by normal vaginal delivery and 21% were by caesarian section. There were 89% term. Only 10% were preterm deliveries and one post term delivery. 78% newborns weighed ≥2.5kg, 22% neonates weighed <2.5kg.

The maximum number i.e. 73% mothers were in the age group of 18-25 years, 21% mothers in the age group of 26-30 years and the remaining i.e. 6% mothers were in the age group of 31-40 years. 54% mothers were primipara and 46% mothers were multipara. None of the mothers had associated illness during pregnancy.

## DISCUSSION

The most common skin manifestation noted was Mongolian spots in 71% neonates. The incidence in various Indian studies ranged from 45% to 89%. [1][2][3][4][5][6] Majority were found over lumbo-sacral region. Higher incidence in black babies, Asiatic babies, Ladino

babies and Mongolians point towards its racial variation.[7][8] Out of 71 neonates with Mongolian spots, 38 were male babies and 33 were females. All the babies were term except for 3 preterm babies. 75.6% of newborns with weight ≥ 2.5 Kg and 54.5% of babies weighing < 2.5 Kg had Mongolian spots. There was a higher incidence in neonates born to multiparous women. There was no relation to mode of delivery and incidence of Mongolian spots. Our observations were similar to those of Sachdeva et al.[3]

**Table1: The Incidence Of Cutaneous Lesions As Observed In Our Study.**

| Dermatological condition | Percentage of neonates |
|---|---|
| **Transient and physiological cutaneous lesions** | 91% |
| Physiological scaling of the newborn | 56% |
| Epstein's pearls | 19% |
| Erythema toxicum neonatorum | 22% |
| Milia | 24% |
| Sebaceous hyperplasia | 21% |
| Miliaria | 8% |
| Physiological jaundice | 9% |
| Cradle cap | 6% |
| Neonatal acne | 1% |
| Lanugo hair | 2% |
| Vernix caseosa | 2% |
| Transient neonatal pustular melanosis | 1% |
| **Birth marks** | 74% |
| Mongolian spots | 71% |
| Congenital melanocytic nevus | 2% |
| Café-au-lait macules | 1% |
| **Infectious skin lesions** | 4% |
| Bullous impetigo | 1% |
| Omphalitis | 1% |
| Neonatal candidiasis | 1% |
| Neonatal scabies | 1% |
| **Congenital malformations of skin** | 3% |
| Cleft lip and cleft palate | 1% |
| Accessory tragus | 1% |
| Aplasia cutis congenital | 1% |

Figure 1: Mongolian Spot

Figure 2: Physiological Scaling

In our study the physiological scaling of the newborn was seen in 56% babies. Its Prevalence in various Indian studies varied from 15%-72%.[1][2][3][4][6] In our study majority were term babies except for 3 preterm babies. 57.7% of newborns with weight ≥ 2.5 Kg and 50% of babies weighing < 2.5 Kg had physiological scaling. Most common sites are palm, soles, wrists, ankles and lower abdomen. In most it was seen between third and fifth days. There was no relation to mode of delivery or parity.

Milia was seen in 24% cases. Incidence of milia has been found to vary from 13%to 93% in Indian studies. [1][2][3][4][5][6] Our study showed female preponderance in 17 neonates (70.83%). It was more frequent in neonates weighing ≥2.5kg (i.e.75%). Most common sites of lesions were perioral(10), forehead(6), nasal(4) and cheeks(4). More than two sites were commonly involved.

In the present study, Erythema toxicum neonatorum was seen in 22% of neonates, similar to other Indian studies which range from 21% to 35%.%.[1][2][3][4][5] Most of the babies are born at term except for two preterm babies which is in concurrence with other studies.[5][6][7][8] Most of the babies developed erythema toxicum neonatorum on second or third day. 86.4% of all cases in our study were babies weighing ≥2.5kg. Thus indicating that gestational age and birth weight were directly related to frequency of occurrence of erythema toxicum neonatorum.[9]

Sebaceous gland hyperplasia was observed in 21% neonates. In Indian studies, the percentage varies from 21% to 68%.[2][3][4][6] It was observed more commonly in term neonates (i.e. 71.42%) and in male babies(i.e. 62%). It is seen more commonly in babies born to multiparous women, those delivered by normal vaginal route and those weighing ≥2.5kg.

Figure 3: Erythema toxicum neonatorum

Figure 4: Sebaceous gland hyperplasia

Figure 5: Epstein's Pearls

Epstein's pearls were seen in 19% neonates. The incidence varied from 20% to 86% in various Indian studies. These differences were due to varying length of follow-up time. In the current study, the incidence of Epstein's pearls did not vary with mode of delivery, birth weight and parity. We observed Epstein's pearls in 8 preterm babies (42.1%) and 11 term babies (57.9%).

Present study found physiological jaundice in 9% neonates. The incidence varied from 3% to 20% in various Indian studies. 8 out of 9 neonates were term babies and 6 out of 9 had birth weight <2.5 Kg. No sex predilection was noted. There was no relation to mode of delivery or parity.

Miliaria was noted in 8% neonates. The incidence varied from 13% to 28% in other Indian studies. Common sites involved were axilla, neck fold and trunk.

Figure 6: Miliaria

Figure 7: Cradle Cap

Cradle Cap was seen in 6% of the neonates in our study.

Vernix Caseosa was seen in 2% neonates, more commonly in the flexures. Both were term neonates with birth weight ≥2.5kg.

Lanugo hair was seen in 2% neonates, both were preterm as reported in other studies.[2][3][6] The lower incidence in our study may be due to the lesser number of preterm babies as well as low sample size.

In present study single baby was observed to have neonatal acne. We found a single case of transient neonatal pustular melanosis with hyperpigmented macules and scaling mainly distributed over trunk. Gram stain showed neutrophils without any organisms.

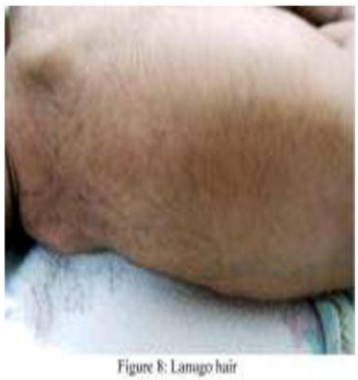
Figure 8: Lanugo hair


Figure 9: Neonatal Acne


Figure 10: Congenital melanocytic nevus

We did observe a case of large congenital melanocytic nevi of size 7x15cms with 2 satellite lesions present over the trunk.

Café-au-lait macules was found in only one neonate.

Cutaneous infections were seen in 4% neonates. They were neonatal candidiasis, bullous impetigo, omphalitis and neonatal scabies, one each.


Figure 11: Neonatal candidiasis


Figure 12: Bullous Impetigo


Figure 13: Omphalitis

Accessory tragus was present in one baby on right ear. We also found cleft lip and palate and aplasia cutis congenital, one case each.

**Table 2: The frequency of various neonatal dermatoses in our study is compared with other Indian studies**

| Cutaneous lesions | Sachdeva et al[3] | Dash et al[2] | Baruah et al[1] | Noopur Jain et al[4] | ML Kulkarni et al[5] | Bryan Nobby et al[6] | Present study |
|---|---|---|---|---|---|---|---|
| Mongolian spot | 60.2% | 89% | 78.4% | 45% | 72% | 68.8% | **71%** |
| Physiological desquamation | 40% | 15% | 40% | 48.3% | - | 72.4 | **56%** |
| Milia | 23.8% | 13% | 93% | 20% | 26.2% | 44.2% | **24%** |
| Erythema toxicum neonatorum | 21% | 27% | 34.8% | 23.3% | 25.2% | - | **22%** |
| Sebaceous | 21.4% | 22% | - | 68.3% | - | 53.2% | **21%** |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| gland hyperplasia | | | | | | | |
| Epstein's pearls | 61% | 38% | 86% | 20% | 43.8% | 57.6% | **19%** |
| Jaundice | - | 20% | - | 3.3% | 12.1% | 20.6% | **9%** |
| Miliaria | 20.6% | 24% | 13.2% | 28.3% | - | - | **8%** |
| Cradle cap | 10% | 4% | - | 28.3% | - | - | **6%** |
| Lanugo hair | 14.4% | 7% | - | 78.3% | - | 14.6% | **2%** |
| Neonatal acne | - | - | - | 5% | - | - | **1%** |

## CONCLUSION

Mongolian spot, physiological scaling of the newborn, erythema toxicum neonatorum, milia were common neonatal dermatosis found in our study. Limitation of this study is that all the diagnosis is based on clinical features which could reduce the specificity of the study and present small sample size would not represent actual population.

Hence we conclude that cutaneous manifestations are frequent in newborns. No treatment is required for transient conditions. But early recognition is important to distinguish these lesions from more serious disorders.

## REFERENCES

1. Baruah MC, Bhat V, Bhargava R, et al. Prevalence of dermatoses in the neonates in Pondichery. Indian J Dermatol Venereal Leprol 1991; 57: 25-28.
2. Dash K, Grover S, Radhakrishnan S, Vani M. Clinico epidemiological study of cutaneous manifestations in the neonate. Indian J Dermatol Venereal Leprol 2000; 66: 26-28
3. Sachdeva M, Kaur S, Nagpal M et al. Cutaneous lesions in new born. Indian J Dermatol Venereal Leprol 2002; 68: 334-7.
4. Jain N, Rathore BS, Agarwal AK, Bhardwaj A. Cutaneous lesions in neonates admitted in a tertiary setup neonatal intensive care unit. Indian J Paediatr Dermatol 2013;14:62-66.
5. Kulkarni ML, Singh R. Normal variants of skin in neonates. Indian J Dermatol Venereol Leprol 1996; 62: 83-86.
6. Nobbay B, Chakraborty N. Cutaneous manifestations in the new born. Indian J Dermatol Venereol Leprol 1992; 58: 69-72.
7. Hidano A, Purwoko R, Jitsukawa K. Statistical survey of skin changes in Japanese neonates. Pediatr dermatol 1986; 3: 140-144.

8. Saraeli T, Kenney JA, Scott RB. Common skin disorders in the newborn Negro infant.J pediatr 1963; 63: 358-362.
9. Mishra PC, Mathur GP, Mathur S, Singh Y D, Sharma D, Gupta AK. Normal anatomic variants in the newborn. Indian pediatrics 1992; 58: 69-72.