



**ASSESSMENT OF CLINICAL MORPHOLOGY OF VARIOUS NEONATAL DERMATOSES IN  
TERTIARY CARE CENTER**

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**ABSTRACT**

**INTRODUCTION:** Skin lesions in the neonates are one of the commonest causes of parental anxiety. This study is undertaken to study the clinical morphology of neonatal skin lesions and the various predisposing factors. This study will help in better understanding of the various physiological and pathological neonatal skin lesions and thus aid in earlier diagnosis and treatment. **METHODS:** 110 new born cases were admitted in department of paediatrics were assessed of morphology of neonatal dermatoses and to study the prevalence of various physiological dermatoses from pathological conditions involving in the neonatal skin and to identify various predisposing factors responsible for the dermatoses by the cross sectional study. **RESULTS:** In this study physiological diagnosis of dermatosis was presented the prevalence of Mongolian spot is highest (54.5%) followed by Epstein pearls (53.6%) and erythema toxicum (43.6%) the next order of prevalence are sucking blister (41.8%) and Milia (40.9%) 27.3% of babies are presented with sebaceous hyperplasia the prevalence of other skin conditions are minimal. That, majority of the neonate were not affected by pathological conditions (80.9%). Among pathological illness, the prevalence of diaper rash was higher (12.7%). The test of association is presented for pathological conditions with selected study variables. It was observed from that, only Erythema Toxicum is significantly associated with Maternal age. It was further inferred from cross tabulation that its occurrence is higher in mothers greater than or equal to 36 years. **CONCLUSION:** In our study, majority of neonates had physiological skin lesions (N=89), both physiological and pathological skin lesions (N=10), and purely pathological (N=11). In our study, diaper rash (63%) is highest, followed by two(2) epidermolysis bullosa, one(1) transient neonatal pustular melanosis and one(1) oral thrush, total (N=11). In our study, only milia and neonatal acne were significant physiological diagnosis, which is more common in male babies than female babies. Prevalence of various skin lesions with socio economic status, of which erythema toxicum had significant association in our study. Erythema Toxicum had significant association with mothers age  $\geq$  to 36 years.

**Keywords:** Clinical morphology, Neonatal dermatoses

**1.INTRODUCTION**

Skin lesions in the neonates are one of the commonest causes of parental anxiety. The features of the neonatal skin and appendages are structurally and functionally different when compared to the adult skin. In addition to acting as a physical barrier, the new born skin plays a major role fluid balance, immuno surveillance and thermoregulation. Skin to Skin contact with the mother plays a major role in the maternal – infant bonding. The skin hence plays a major role in the transition of the fetus from intra uterine to extra uterine life. The examination of neonatal skin plays a major role in neonatal examination. The examination of neonatal skin (breast buds, plantar creases, and desquamation) helps in assessment of gestational age. The changes in skin colour

such as cyanosis, pallor and icterus indicates systemic illnesses. Skin lesions such as petechiae could be an indicator of fatal neonatal sepsis. Cutaneous skin infections could also be the focus of infection in neonatal sepsis. The neonatal skin presents with a wide range of skin lesions. Many physiological and pathological skin lesions can present in the neonatal period. Majority of the neonatal skin lesions are physiological, transient and self-limiting requiring no treatment. In addition to the physiological skin lesion, neonates can also present with several pathological skin lesions which may require diagnostic and therapeutic interventions. The skin lesions of neonates can also be an indicator of systemic diseases. It is therefore very important to correctly identify the neonatal skin lesions so as to provide early therapeutic interventions for the pathological lesions and to avoid unnecessary therapeutic intervention for the physiological lesions. This study is undertaken to study the clinical morphology of neonatal skin lesions and the

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various predisposing factors. This study will help in better understanding of the various physiological and pathological neonatal skin lesions and thus aid in earlier diagnosis and treatment.

## 2.METHODS AND MATERIALS:

This is a cross-sectional study. This study was carried out in the Department of Pediatrics and Department of Dermatology, RMMCH. This study was carried out from November 2013 to November 2014. The study population

includes a total of 110 babies fulfilling the inclusion criteria. Inclusion criteria were neonates born in institute, neonates admitted in NICU of institute, neonates attending Pediatric and Dermatology Outpatient department at institute. Exclusion criteria were Babies above 28 days of life. This study was approved by the Ethical Committee of our institute. Neonates born at RMMCH, admitted at RMMCH and Neonates attending Pediatric and Dermatology OPD whose parents gave consent were enrolled for the study. The neonates were evaluated by thorough history and detailed clinical examinations to look for dermatological lesions.

TABLE: 1a PHYSIOLOGICAL DIAGNOSIS VS GENDER

PHYSIOLOGICAL CONDITIONS	NUMBER			PERCENTAGE
	MALE	FEMALE	BOTH	
MONGOLIAN SPOT	31	29	60	54.5
EPSTEIN PEARLS	19	40	59	53.6
MILIA	30	15	45	40.9
SEBACEOUS HYPERPLASIA	18	12	30	27.3
MILIRIA	5	3	8	7.3
SUCKING BLISTER	20	26	46	41.8
ERYTHEMA TOXICUM	30	18	48	43.6
STORK BITE	2	2	4	3.6
PEELING OF SKIN	1	2	3	2.7
BREAST ENGORGEMENT	2	1	3	2.7
NEONATAL ACNE	4	0	4	3.6

In table 1(a), physiological diagnosis of dermatosis was presented the prevalence of Mongolian spot is highest (54.5%) followed by Epstein pearls (53.6%) and erythema toxicum (43.6%) the next order of prevalence are sucking blister (41.8%) and Milia (40.9%) 27.3% of babies are presented with sebaceous hyperplasia the prevalence of other skin conditions are minimal.

TABLE: 1 (b) ASSOCIATION OF DERMATOSIS WITH RESPECT TO GENDER

PHYSIOLOGICAL CONDITIONS	VALUE	SIGNIFICANT
MONGOLIAN SPOT	0.884	0.347
EPSTEIN PEARLS	0.136	0.712
MILIA	7.566	0.006
SEBACEOUS HYPERPLASIA	0.297	0.586
MILIRIA	0.464	0.496
SUCKING BLISTER	0.997	0.318
ERYTHEMA TOXICUM	0.023	0.867
STORK BITE	1.115	0.291
PEELING OF SKIN	2.974	0.085
BREAST ENGORGEMENT	0.306	0.580
NEONATAL ACNE	4.003	0.045

In table 1(b), association of skin problem (physiological diagnosis) was studied with reference to gender significant association was observed for milia (P=.006<.05) and neonatal acne (P=.045<.05)

Table: 2 (a) PATHOLOGICAL DIAGNOSIS

PATHOLOGICAL	NUMBER	PERCENTAGE
TRANSIENT NEONATAL PUSTULAR MELANOSIS	2	1.8
ORAL THRUSH	3	2.7
DIAPER RASH	15	13.6
EPIDERMOLYSIS BULLOSA	1	0.9
NIL	89	80.9
TOTAL	110	100

TABLE: 2 (b) ASSOCIATIONS OF PATHOLOGICAL CONDITIONS WITH SELECTED STUDY VARIABLE

VARIABLES	VALUE	SIGNIFICANT
SEX	2.976	0.562
SOCIA ECONOMIC STATUS	5.108	0.995
MATERNAL BIRTH	17.824	0.001
MODE OF DELIVERY	1.501	0.826
ORDER OF DELIVERY	16.414	0.037
GESTATIONAL AGE	1.601	0.809
BIRTH WEIGHT	1.944	0.983

It was observed from table 2 (a) that, majority of the neonate were not affected by pathological conditions (80.9%). Among pathological illness, the prevalence of diaper rash was higher (12.7%). In table 4(b), the test of association is presented for pathological conditions with selected study variables.

**DISCUSSION:**

One hundred and ten neonates were the subject of this study. Of which 56 (50.9%) were male and 54 (49.1%) were female. There was no major difference in the overall rate of skin diseases among sexes as noted in previous study by A.A. El-Moneimet al.<sup>11</sup> In our study 80.9% of the neonates were affected by only physiological lesions while 18.18% of neonates had pathological lesions. This is comparable to a study of Neonatal Dermatitis in a Tertiary Care Hospital done by Gajan Agarwal in which 84.45% had only physiological lesions and 12.60% of neonates had pathological lesions.<sup>1</sup> 9.09 % of neonates in our study were affected by both physiological and pathological lesions which is significantly higher than the study done by Gajan Agarwal in which 2.95% of the neonates with skin lesions had both physiological and pathological Lesions.<sup>1</sup> In our study, among the physiological lesions, the prevalence of Mongolian spot is highest (54%.5) followed by Epstein pearls (53.65) and erythema toxicum neonatorum (43.6%). But in the study by Gajan Agarwal et al Epstein pearls was found to be the most common physiological skin lesion (78%) followed by mongolian spots (65%).<sup>1</sup> In an Observational Research of Skin Findings in Newborns and Their Relationship with Maternal Factors by Ozlem E et al, Hyperplasia of sebaceous gland 26.1% followed by Mongolian spots 19.0% followed by ETN (13.1%) were found to be the common physiological skin lesions.<sup>10</sup> Among the pathological lesions, the occurrence of diaper rash was highest in our study (13. 6%). Diaper rash was also the commonest pathological lesion noted in neonates in a study by Muhammad Javed.<sup>24</sup> But In a study by Gagan Agarwal et al the pathological lesions, pustulosis was most commonly seen in 28% cases, second most common lesion was oral thrush (26%), diaper rash was found in 5% cases and cellulitis in 4% cases. Of the skin lesions, significant correlation was noted in our study between male gender and the prevalence of milia and neonatal acne. But in the study by Ozlem E et al significant gender correlation was found only for genital hyperpigmentation which was found to occur more in male.<sup>10</sup> Erythema Toxicum Neonatorum was significantly associated with Maternal age in our study and its prevalence was found to be significantly higher in mother greater than or equal to 36 years. But in the study by Ozlem E et al, significant correlation with maternal age was not found for any skin lesions other than Cutis marmoratus.

**5.CONCLUSION**

50.9% of neonates were male babies. The prevalence of Mongolian spot was highest (54%.5) followed by Epstein pearls (53.65) and erythema toxicum (43.6%). Among pathological conditions, the occurrence of diaper rash was highest (13. 6%). The prevalence of Milia and neonatal acne were significantly higher in male neonates. The occurrence of erythema toxicum was significantly higher in class I, class II and class III socio economic status. The prevalence of erythema toxicum was significantly higher in mother greater than or equal to 36 years. There was significantly higher number of babies presented with erythema toxicum born to mothers with multi parity status. The prevalence of erythema toxicum was significantly higher in LSCS whereas the prevalence of sebaceous hyperplasia was common in normal vaginal delivery.

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