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ONE YEAR HOSPITAL BASED STUDY OF VARIOUS DERMATOSES IN NEONATES AT TERTIARY CARE HOSPITAL, SECUNDERABAD, TELANGANA

***Bhumesh Kumar Katakam, S.B. Kavitha, G. Narasimha Rao Netha, M. Shahana, T. Satyasree, J.Tulasi**

Department of DVL, Gandhi Medical College, Secunderabad, Telangana.

***Corresponding Author: Dr. Bhumesh Kumar Katakam**
Department of DVL, Gandhi Medical College, Secunderabad, Telangana.

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ABSTRACT

Background: Neonatal skin disorders evolve much more rapidly than adults skin diseases and some conditions that initially appear to be serious turn out to be trivial, whereas in others the opposite is true. The premature infant is at a much higher risk of skin complication than the mature newborn due to a markedly decreased epidermal barrier function. **Aim:** To determine the prevalence of various dermatoses in neonates and to assess the pattern of various physiological and pathological dermatoses in neonates. **Materials and Methods:** 300 Neonatal babies born via spontaneous vaginal delivery or lower segment cesarean section conducted in the department of OBG at Gandhi Hospital, Secunderabad, which was conducted over a period of one year from March 2015 to February 2016. **Results:** The male to female ratio among the neonates was 1.06:1. 23% were born of consanguineous marriage. Majority of mothers 84.66% were in the age group 20-29 years. Only 5 mothers were above 34 years of age. All the neonates had at least 1 cutaneous change. The prevalence of physiological dermatoses was 72.66% and pathological dermatoses was 53.33%.The commonest physiological dermatoses noted was mongolian spots 52.33%.The commonest pathological dermatoses observed was Erythema Toxicum Neonatorum 12.33%. **Conclusion:** The neonatal period is one of rapid adaptation in which the skin plays an important role in barrier function and thermoregulation. A host of aberrations varying from physiological and transient to grossly pathological are seen in the skin of the neonate. In the present study, the commonest physiological dermatoses were Mongolian spots and Erythema toxicum neonatorum was the most common pathological dermatoses observed. There was a statistically significant relation between pathological dermatoses in the neonates and consanguinity of parents. Recognition and understanding the neonatal dermatoses will enable the physician to allay parental concerns and initiate further evaluation and/or treatment where necessary.

KEYWORDS: Physiological dermatoses, pathological dermatoses and neonate.

INTRODUCTION

Neonatal skin disorders evolve much more rapidly than adults skin diseases and some conditions that initially appear to be serious turn out to be trivial, whereas in others the opposite is true.[1] The premature infant is at a much higher risk of skin complication than the mature newborn due to a markedly decreased epidermal barrier function. The post mature infant like the dysmature infant, too experiences intrauterine malnutrition due to placental sufficiency and has dermatological peculiarities like a dry peeling integument and lack of subcutaneous fat.[3,2] The full term mature newborn comparatively has a functionally mature skin. However, the full term newborns are also predisposed to various dermatoses, both physiological and pathological. Few studies were conducted, documenting neonatal dermatoses especially profiling full term newborns with no pre-existing factors like maternal infections, hypertension and diabetes which adversely affect them. With this background in view, the present study was undertaken to determine the prevalence and pattern of cutaneous changes, both physiological and pathological in Newborns during the first 4 weeks of life.

MATERIAL AND METHODS

Study population: 300 Neonatal babies born via spontaneous vaginal delivery or lower segment cesarean section (LSCS) conducted in the department of Obstetrics and Gynaecology at Gandhi Hospital, Secunderabad,Telangana which was conducted over a period of one year from March 2015 to February 2016.

Method of Collection of data: A detailed history was collected in a prescribed proforma by questioning the mother and from the maternal records available. Maternal obstetric history, prevailing dermatological or medical problems, family history of metabolic disorders, genetic disorders and atopy were recorded in the

proforma. An informed consent was taken from the mothers. The entire skin surface of each baby was examined including palms, soles, nails, genitalia and scalp under good illumination and general systemic examination done and the findings recorded. The diagnosis was made and confirmed clinically.

Inclusion criteria: All babies born by vaginal delivery or by LSCS.

Exclusion criteria: Babies beyond 4 weeks of age.

Objective: 1. To determine the prevalence of various dermatoses in neonates. 2. To assess the pattern of various physiological and pathological dermatoses in neonates during the first 4 weeks of neonatal life.

RESULTS

300 Neonatal babies were examined for physiological and pathological dermatoses for one year from March 2015 to February 2016 at Gandhi Hospital, Secunderabad attached to Gandhi Medical College, Secunderabad, Telangana.

In the present study, male babies accounted for 51.67 %(155) and female babies accounted 48.33% (145).The ratio between Males and Female babies were 1.06:1.Among the physiological dermatoses(chart one) 58.33 %(175 cases) of neonates showed single dermatoses and 14.33 %(43 cases) showed multiple dermatoses and 27.33 %(82 cases) of neonates did not show any change. among the pathological dermatoses(chart two), single dermatoses was seen in 50 % (150 cases) of neonates and multiple dermatoses was seen in 3.33 %(10 cases) and 46.66 %(140 cases) of neonates did not show any change. Among the physiological dermatoses(chart three), 52.3% (157 cases) of neonates were found to have Mongolian spots(image one) and 11% (33 cases) had Physiological Jaundice. The other common dermatoses noted were vernix caseosa(image two) 10% (30 cases), Epstein pearls 9.33 %(28 cases), Milia(image seven) 1 %(3 cases) physiological desquamation 1% (3 cases). One case of Acrocyanosis was recorded. Among the pathological dermatoses(chart four) Erythema toxicum neonatorum(image five) was the commonest pathological dermatoses recorded in 12.33%(37 cases) followed by transient pustular melanosis 1%(3 cases), Miliaria Crystallina(image twelve) 1%(3 cases) and acne neonatorum(image six) 1%(3 cases).Among the neonatal vesiculo pustular dermatoses(chart five), Erythema toxicum Neonatorum was the commonest neonatal vesiculo pustular dermatoses seen in 12.33%(37 cases) neonates followed by Impetigo neonatorum(image nine) 2%(6 cases), Miliaria crystallina 1%(3 cases) and Transient neonatal pustular melonosis in 1%(3 cases). There was one case of Neonatal varicella(image eleven) and one case of neonatal herpes meningo encephalitis(image ten), both of them presented with vesicles. Among birth marks (chart six), salmon patch (image three) was the commonest anomaly observed (28.33%) followed by café au lait Macules (1.66%) and Hemangioma of infancy (image four) (1.22%) and Nevus flammeus (portwine stain) (0.33%). Among congenital malformations, Bilateral congenital equino varus was observed in 2 cases (0.66%) and Cleft lip was seen in 2 cases(0.66%), Cleft lip & palate in 1 case(0.33%), Spina bifida occulta in 1 case(0.33%) and Meningo Myelocele in 1 case (0.33%). In the present study 1.22 %(4 cases) neonates were born to HIV positive mothers. Of which physiological dermatoses was observed in 0.66 %(2 cases) neonates and pathological dermatoses in 0.66 %(2 cases).

In the present study seborrhoeic dermatitis was observed in 3.3 %(10 cases) of neonates, of which cradle cap was seen in 2%(6 cases) and scalp and seborrhoeic dermatitis in 1.33%(4 cases).In the present study 23% (69 cases) of babies were born out of consanguineous marriage, of which 56.52 %(39 cases) were physiological dermatoses and 43.47 %(30 cases) were pathological dermatoses.

77 %(231 cases) of babies were born of non consanguineous marriage, of which 62.77 %(145 cases) were physiological dermatoses and 37.22 %(86 cases) were pathological dermatosis. In this study, it was found that there was no statistical significance in occurrence of either physiological or pathological dermatoses in relation to sex of babies. The maternal age at the time of delivery of the new born was noted and found to be mostly between 20 to 29 years (84.66%). only 1.66% of mothers were above the age of 34 years. In this study, collodion baby(image fourteen) was observed in 0.66% (2 cases), Harlequin baby(image fifteen) in 0.33%(1 case), congenital vitiligo(image thirteen) in 0.33%(1 case), neonatal pityriasis Versicolor(image eight) in 0.33%(1 case), oral thrush(image sixteen) in 0.33%(1 case) and neonatal chicken pox(image eleven) in 0.33%(1 case).

Image 1:Mongolian Spot

Image 2: Vernix Caseosa

Image 3: Salmon Patch

Image 4: Hemangioma of Infancy & Café au Lait Macule

Image 5: ETN

Image 6: Acne Neonatorum

Image 7: Milia

Image 9: Impetigo Neonatorum

Image 10 Neonatal Herpes Meningo Enchephalitis

Image 11 Neonatal Varicella

Image 12 Miliaria Crystallina

Image 13: Vitiligo

Image 14: Collodian Baby

Image 15: Harlequin Baby

Image 16: Oral thrush

Chart 1:Physiological dermatoses

Among the physiological dermatoses 58.33 %(175 cases) of neonates showed single dermatoses and 14.33 %(43 cases) showed multiple dermatoses and 27.33 %(82 cases) of neonates did not show any change.

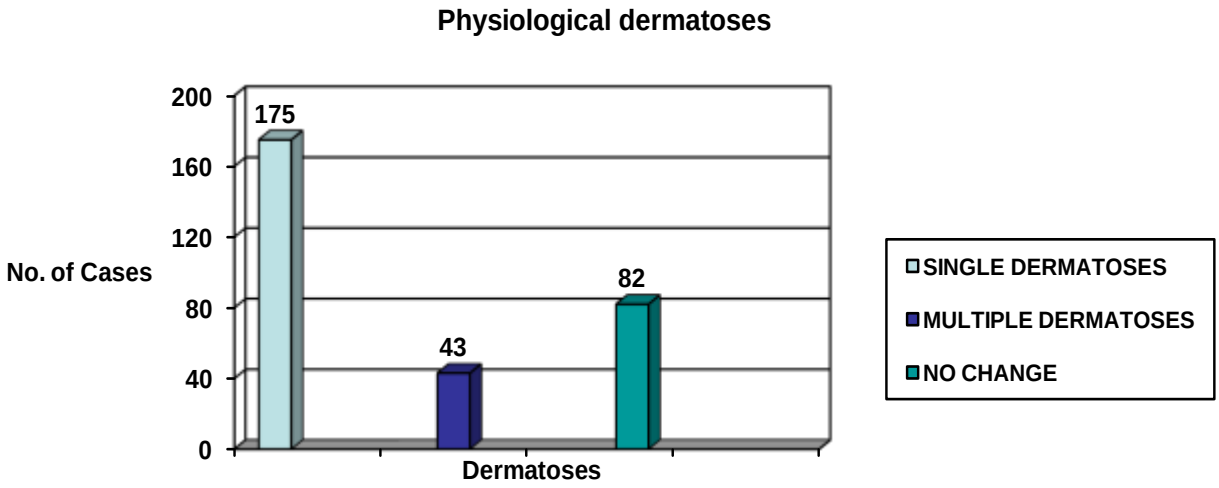


Chart 2: Pathological dermatoses

among the pathological dermatoses, single dermatoses was seen in 50 % (150 cases)of neonates and multiple dermatoses was seen in 3.33%(10 cases) and 46.66%(140 cases) of neonates did not show any change.

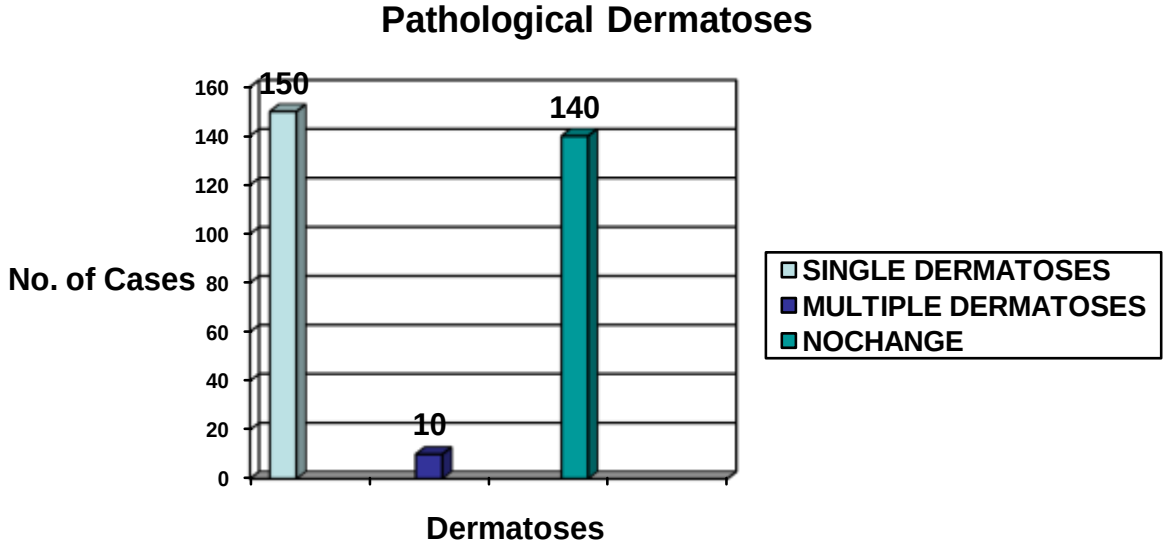


Chart 4: types of Pathological Dermatoses

Among the pathological dermatoses Erythema toxicum neonatorum was the commonest pathological dermatoses recorded in 12.33%(37 cases) followed by transient pustular melanosis 1%(3 cases), Miliaria Crystallina 1%(3 cases) and acne neonatorum 1%(3 cases).

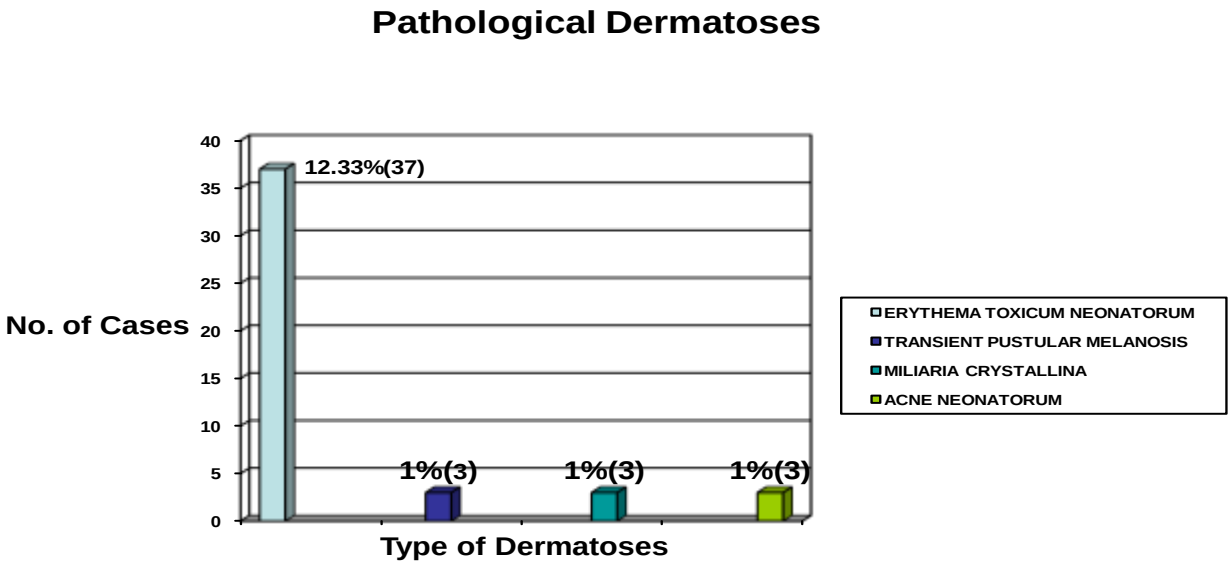


Chart 5: Neonatal Vesiculopustular Dermatoses

Among the neonatal vesiculo pustular dermatoses, Erythema toxicum Neonatorum was the commonest neonatal vesiculo pustular dermatoses seen in 12.33%(37 cases) neonates followed by Impetigo neonatorum 2%(6 cases), Miliaria crystallina 1%(3 cases) and Transient neonatal pustular melonosis in 1%(3 cases).There was one case of Neonatal varicella and one case of neonatal herpes meningo encephalitis, both of them presented with vesicles.

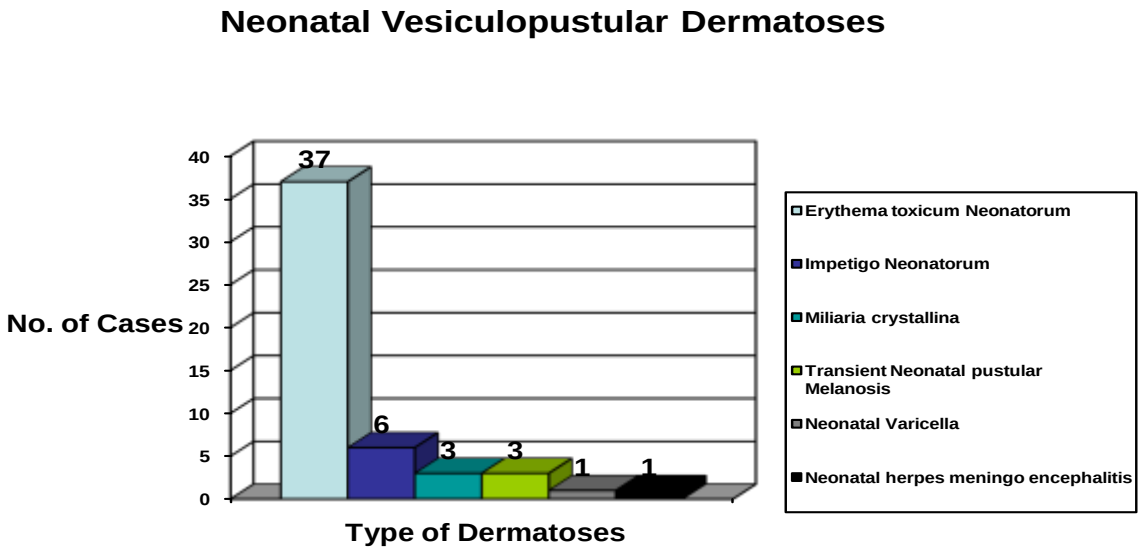
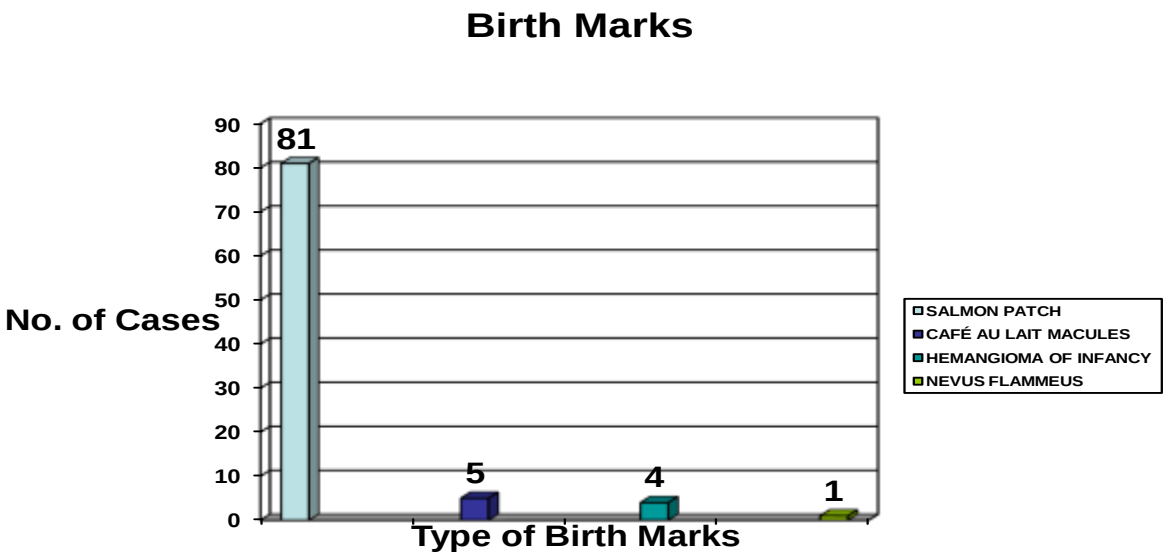


Chart 6: Birth Marks

Among birth marks, salmon patch was the commonest anamoly observed (28.33%) followed by café au lait Macules (1.66%) and Hemangioma of infancy (1.22%) and Nevus flammeus (portwine stain) (0.33%).



DISCUSSION

Out of the 300 neonates, 155 were males and 145 were females. The male to female ratio was 1.06:1. There was a male preponderance in our study.

84.66% of mothers were in the age group 20 to 29 years at the time of delivery. Only (5) 1.66% of mothers were above the age of 34 years. Our study coincides with the study by Nobbay and Chakarbarty et al[30] who reported 86.4% in the same age group.23% babies were born of consanguineous marriage. In the present study, prevalence of physiological dermatoses was 72.62% (218 cases). A similar incidence 74.2% and 72.33% was recorded by Dash et al[34] and Patil et al[35] respectively. Similarly, the prevalence of pathological dermatoses was 53.33% (160 cases). A similar incidence 54.22% and 51.4% was recorded by Nobbay and Chakarbarty et al[30] and Sachdeva et al[31] respectively.

In the present study the most common physiological skin change noted was Monoglian spots 52.33% (157 cases). The results are similar (53.44%) in the study conducted by Kulkarni and Singh[33] et al. However higher percentage was reported by Sachadeva et al[31] (60.2%), Nobbey and Chakrabarthy[30] (68.8%) and Mishra et al[32] (72%) in their studies.

The common sites of distribution of the Mongolian spots were the lower back and shoulders in the present study which is similar to that mentioned in literature.[13] In our study 11% (33 cases) cases had physiological jaundice which is comparable to studies conducted by Kulkarni and Singh[33] (12.1%). However higher percentage was reported by Dash et al[34] (15.2%).10% (30 cases) of the neonates had Vernix caseosa. It was mainly present in the axillae and genitocrural folds. This is in contrast to the studies conducted by Kulkarni et al[33] (70.2%) and Dash K et al[34] (82.4%). The higher incidence of vernix caseosa in Kulkarni and Singh[33] and Dash et al[34] studies could be due to the study group involving first five days of life in their studies. In this study 9.33 %(28 cases) of cases had Epstein pearls. However higher incidence of Epstein pearls was reported by Mishra et al[32] (36.92%) and Patil et al[35] (90.5%).The overall frequency of Milia in this study was 1 %(3 cases). However higher incidence of milia was reported by dash et al[34] (16%) and Sachdeva et al[31] (23.8%).In this study physiological desquamation was noted in 1% (3 cases) of neonates. In contrast Dash et al[34] have reported higher incidence (38.6%) of physiological desquamation. In our study 1 case had acrocyanosis. However Sachdeva et al[31] reported higher incidence (38.4%).

In the present study 12.33 %(37 cases) of neonates had erythema toxicum neonatorum. This coincides with the study by Mishra et al[33] (15.7%) However higher incidence was reported by Kulkarni et al[32] (21%) and Dash et al[33] (50%) in their studies. In the present study majority of the cases had onset of lesions on the 2nd day of life.

Miliaria Crystallina was observed in 1% of cases which is near to the studies conducted by Nobbay and Chakrabarty et al[30] (4.4%).

In our study there were 3 cases (1%) of Transient neonatal pustular melanosis A similar incidence was reported by Kulkarni and Singh et al[33] (2.6%). In the present study Acne Neonatorum was found in1%(3 cases) of cases. The similar incidence 0.2% was recorded in the study by Nobbay and Chankrabarty et al[30] In the present study Caput succedaneum was observed in 0.33 %(1 case) of cases. A higher incidence of 13.2% was recorded by Nobbay and Chakrabarty et al.[30]

The prevalence of Neonatal vesiculopustular Dermatoses in this study was 17% (51 cases). The commonest neonatal vesiculopustular Dermatoses observed was erythema toxicum neonatorum 12.33% (37 cases) other vesiculopustular Dermatoses were impetigo neonatorum (2%), Miliaria Crystallina (1%), Transient neonatal pustular melanosis (1%), Neonatal Varicella(0.33%), Neonatal herpes Meningoencephalitis (0.33%). The prevalence of seborrhoeic dermatitis in this study was 3.33% (10cases) of which 6 cases were confined to scalp (cradle cap) and remaining 4 cases had involved scalp and seborrhoeic area of the body. A similar incidence (4.2%) was recorded in the study by Nobbay and Chakrabarty et al[30] In the present study the prevalence of neonates born to HIV positive mothers was 1.33% (4 cases). Two babies had physiological dermatoses (Mongolian Spots, Physiological Vaginal discharge) and two babies had pathological dermatoses (ETN, Salmon patch). Erythema Toxicum Neonatorum found in neonates born to HIV positive mothers was not different from Erythema Toxicum Neonatorum found in neonates born to HIV negative mothers. Café au lait Macules were observed in 1.66 %(5 cases) of neonates in this study. All of them had a single lesion. A similar incidence (2.2% and 2.88%) was reported by Nobbay and Chakrabarty et al[30] and Kahana et al[36] respectively.

28.33 %(81 cases) neonates were found to have salmon patches. A similar incidence was reported by Nobbay and Chakrabarty et al (30.2%) and Sachdeva et al[30, 31] (29.44%).1.33 %(4 cases) neonates were found to have Hemangioma of infancy in the present study. 75% (3 cases) of Hemangiomas were found on head and neck, 25% (1case) of Hemangioma was found on extremities. Our study is comparable with the study by Silverman et al (2%).[22]

(0.33%) Nevus flammeus was diagnosed clinically in this study. A similar incidence 0.66% was reported by Nobbay and Chakrabarty et al.[30] Our study revealed 2.33% (7 cases) of congenital malformations, of which 2 cases were of congenital talipes equino varus, 3 cases were of cleft lip and palate, one case spina bifida occulta and one case of Meningomyelocele. A similar incidence 3.2% was reported by Nijhawan and Lyon et al.[29]

SUMMARY

300 Neonatal babies born via spontaneous vaginal delivery or lower segment cesarean section (LSCS) conducted in the department of Obstetrics and Gynaecology at Tertiary care Hospital, Secunderabad were examined for the first 28 days of life over a period of 1 year. The male to female ratio among the neonates was 1.06:1.

23% (69 cases) were born of consanguineous marriage. Majority of mothers 84.66% were in the age group 20-29 years. Only 5 mothers were above 34 years of age. All the neonates had at least 1 cutaneous change (physiological or pathological). The prevalence of physiological dermatoses was 72.66 %(118 cases) and pathological dermatoses was 53.33 %(160 cases). The commonest physiological dermatoses noted was mongolian spots 52.33%(157 cases) followed by physiological jaundice 11%(33 cases), Vernix Caseosa 10%(30 cases) and Epstein pearls 9.33%(28 cases).The commonest pathological dermatoses observed was Erythema Toxicum Neonatorum 12.33%(37 cases) followed by Transient Pustular Melanosis 1%(3 cases), Miliaria Crystallina 1%(3 cases) and Acne Neonatorum 1%(3 cases).

CONCLUSION

The neonatal period is one of rapid adaptation in which the skin plays an important role and fully assumes for the first time its function as a barrier and of thermoregulation. A host of aberrations varying from physiological and transient to grossly pathological are seen in the skin of the neonate. In the present study, the commonest physiological dermatoses was Mongolian spots (52.33%) followed by physiological jaundice 11%. Erythema toxicum neonatorum (12.33%) was the most common pathological dermatoses observed. There was a statistically significant relation between pathological dermatoses in the neonates and consanguinity of parents. Recognition and understanding the neonatal dermatoses will enable the physician to allay parental concerns and initiate further evaluation and/or treatment where necessary.

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