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Original Research Article

Profile of neonatal dermatoses in a tertiary care teaching hospital of Haryana

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ABSTRACT

Background: To assess the incidence and profile of neonatal dermatoses in a tertiary care hospital of Haryana and study its association with various perinatal risk factors.
Methods: All inborn neonates (<28 days of life) including those seen in the outpatient department on follow up between November 2016 to April 2017 formed the baseline population and babies with skin lesions were included in the study. A detailed perinatal history and newborn examination of the baby was done by a pediatrician and all relevant details were recorded. Data was analyzed, and inferences were drawn using tables.
Results: In our study, a total of 2760 newborn (1506 (54.6%) males and 1254 (45.4%) females) were studied. The incidence of neonatal dermatoses was found to be 94.1%. There were 1849 (66.9%) term, 853 (30.9%) preterm, and 58 (2.1%) post term neonates. 1901 (68.8%) had birth weight >2.5kg while 859 (31.1%) had birth weight ≤2.5kg. 1223 (44.3%) were born to primipara while 1537 (55.6%) were born to multipara mothers. Mothers of 54 (1.9%) neonates were < 20 years of age; 1157 (41.9%) in the age group of 20-25 years; 1324 (47.9%) in the age group of 25-30 years and 225 (8.1%) in the age group >30 years. 1806 (65.4%) neonates were born by normal vaginal delivery and 954 (34.6%) neonates were born by cesarean section. In 13 (0.5%) neonates, history of consanguinity was present while it was absent in 2747 (99.5%) neonates. Most common skin lesions observed were transient skin lesions among which Mongolian spots (62.9%), epstein pearls (48.8%), erythema toxicum (41.8%), milia (40.6%) and miniature puberty (35.9%) were the most common.
Conclusions: Incidence of neonatal dermatoses was found to be higher (54.6%) among males as compared to females (45.4%); among term babies; those with birth weight >2.5kg; those born to multipara mothers; those born via normal vaginal delivery and those with maternal age 25-30 years.

Keywords: Dermatoses, Incidence, Neonate, Risk factors

INTRODUCTION

Skin of a neonate plays an important role in transition from an aqueous to an air-dominant environment by providing mechanical protection, assisting thermoregulation, immune-surveillance and fluid balance.[1] The skin of the infant differs from that of an adult by being thinner, delicate, weaker intercellular attachments and fewer sweat and sebaceous gland secretions. So, it is more susceptible to severe infections.[2] Neonatal dermatoses include a spectrum of cutaneous disorders appearing during the first 4 weeks of life. Nearly 99.3% neonates have been found to be affected with various skin manifestations.[3]

Majority of these are transient and physiological and disappear without any treatment while only few are pathological.[4]

Neonatal dermatoses are classified as follows:

- Transient skin disorders.
- Congenital disorders- birthmarks and genodermatoses.
- Acquired skin disorders specific to the neonatal period.
- Iatrogenic dermatological complications.[5]

Skin changes are affected by heredity, race, gestational age and maternal health in addition to other external factors such as hygiene, socioeconomic status, customs, mode of delivery etc.[6] Neonatal dermatoses are a very common cause of parental anxiety and concern pressing the need for appropriate diagnosis and counseling of parents. This avoids unnecessary diagnostic and therapeutic interventions. A number of studies have been reported on neonatal dermatoses but none from this region of India. We, therefore, planned this study to assess the incidence and profile of neonatal dermatoses from a tertiary care teaching hospital of north India and to study its association with various perinatal risk factors.

METHODS

A cross-sectional descriptive study was carried out in a tertiary care teaching hospital of north India.

Inclusion criteria

All inborn neonates <28 days of life including those visiting outpatient department (OPD) on follow up between November 2016 to April 2017 formed the baseline population and those with any skin lesions were included in the study.

Exclusion criteria

- Neonates >28 days of life.
- Neonates with maternal history of drug/alcohol abuse.
- Neonates with gross congenital malformations.
- Critically sick neonates.
- Neonates with jaundice, cyanosis and pallor.
- Neonates born outside our hospital.

A written informed consent was taken from the parents/guardians of each neonate included in the study. Detailed maternal history including age, parity, mode of delivery, history of consanguinity and any illness during pregnancy was recorded. Complete examination of baby including general, systemic and dermatological (skin, scalp, mucous membranes, genitalia, hair and nails) was done after proper hand hygiene under adequate light and ambient temperature and all relevant details were recorded. Diagnosis was made by pediatrician after clinical examination and wherever required dermatology consultation was done to confirm the diagnosis. Data was analyzed and inferences were drawn using tables and statistical analysis was done using Chi- square test and Z-proportion.

RESULTS

Out of 2926 neonates, 2760 (94.1%) had skin lesions. Most common skin lesions observed were transient skin lesions. The profile and frequency of lesions has been detailed in Table 1.

Table 1: Profile of cutaneous lesions in our study.

Dermatological condition	% of neonates n=2760
Transient skin disorders	
Mongolian spots	1738 (62.9)
Epstein pearls	1347 (48.8)
Erythema toxicum neonatorum	1156 (41.8)
Milia	1123 (40.6)
Miniature puberty	993 (35.9)
Sebaceous gland hyperplasia	876 (31.7)
Vernix caseosa	754 (27.3)
Lanugo hair	652 (23.6)
Caput succaedanum	342 (12.4)
Physiological scaling of newborn	298 (10.7)
Miliaria	245 (8.8)
Transient neonatal pustular melanosis	227 (8.2)
Cradle cap	59 (2.1)
Neonatal alopecia	34 (1.2)
Sucking blister	25 (0.9)
Cephalhematoma	18 (0.6)
Salmon patch	18 (0.6)
Neonatal acne	17 (0.6)
Hypertrichosis	7 (0.2)
Congenital disorders and Genodermatoses	
Sacrococcygeal dimple/sinus	87 (3.1)
Benign neonatal hemangiomatoses	41 (1.5)
Pre-auricular skin tag	34 (1.2)
Cleft lip and cleft palate	31 (1.1)
Natal teeth	26 (0.9)
Congenital melanocytic nevus	15 (0.5)
Café-au-lait macules	13 (0.4)
Accessory finger	9 (0.3)
Collodion baby	2 (0.07)
Acquired skin disorders specific to Neonatal period	
Diaper dermatitis	345 (12.5)
Neonatal oral candidiases	128 (4.6)
Omphalitis	57 (2)
Infantile seborrhoeic dermatitis	34 (1.2)
Neonatal scabies	17 (0.6)
Neonatal varicella syndrome	2 (0.07)
Iatrogenic dermatologic Complication	
Irritant contact dermatitis	35 (1.2)

Various neonatal and maternal factors studied are depicted in Table 2 and 3. Out of 2760 neonates, 1506 (54.6%) were male and 1254 (45.4%) were female. There

were 1849 (66.9%) term, 853 (30.9%) preterm, and 58 (2.1%) post term neonates. 1901 (68.8%) had birth weight >2.5kg while 859 (31.1%) had birth weight ≤2.5kg. A total of 1223 (44.3%) neonates were born to primipara while 1537 (55.6%) were born to multipara mothers. Mothers of 54 (1.9%) neonates were < 20 years of age; 1157 (41.9%) in the age group of 20-25 years; 1324 (47.9%) in the age group of 25-30 years and 225 (8.1%) in the age group >30 years. 1806 (65.4%) neonates were born by normal vaginal delivery and 954 (34.6%) were born by cesarean section. In 13 (0.5%) neonates, history of consanguinity was present while it was absent in 2747 (99.5%) neonates.

Table 2: Relationship of skin lesions with neonatal factors.

Neonatal factor	n (%)	P- value
Sex		
Male	1506 (54.6)	0.0001
Female	1254 (45.4)	
Maturity		
Preterm	853 (30.9)	0.0001
Term	1849 (66.9)	
Post-term	58 (2.1)	
Birth weight		
<2.5kg	859 (31.1)	0.0001
≥2.5kg	1901 (68.8)	

Table 3: Relationship of skin lesions with maternal factors.

Maternal factor	n (%)	P- value
Parity		
Primipara	1223 (44.3)	0.0001*
Multipara	1537 (55.6)	
Maternal age		
<20yrs	54 (1.9)	0.0001*
20-25yrs	1157 (41.9)	
25-30yrs	1324 (47.9)	
>30yrs	225 (8.1)	
Mode of delivery		
NVD	1806 (65.4)	0.0001*
LSCS	954 (34.6)	
History of consanguinity		
Present	13 (0.4)	0.0001*
Absent	2747 (99.5)	

DISCUSSION

Cutaneous lesions are not uncommon among neonatal age group. Many studies have been conducted to evaluate the incidence and profile of neonatal dermatoses. In our study, incidence of neonatal dermatoses was found to be 94.1%. The incidence of neonatal dermatoses in various studies lies between 57% and 99.3%.[4] This variability may be due to variations in study methods, demography, various environmental and racial factors. Our observation was similar to the findings of Sachdeva et al, Shehab et al, Patel et al, Gorur et al and Gokdemir et al.[4,7-10] Most common dermatoses observed in index study were transient skin lesions among which Mongolian spots (62.9%), Epstein pearls (48.8%), erythema toxicum (41.8%), milia (40.6%) and miniature puberty (35.9%) were the most common ones in order.

Mongolian spots are flat, bluish-black macules caused by the arrest of melanocytic migration in the dermis of the embryo. Most commonly found in lumbo-sacral area but can also found on the legs, back, flank and shoulders. The greater the degree of natural pigmentation, the higher is the occurrence of Mongolian spots in a newborn.[11] Our finding was consistent with the studies of Gorur, Dash, Baruah, Aggarwal, Kunju and Sandeep et al.[9,10,12-16] However, Gokdemir and Hogade et al observed a lower incidence of Mongolian spots in their studies which can be due due to various demographical factors or small sample size.[10,17] Epstein pearls were observed in 48.8% of neonates in our study which is similar to the findings of Sachdeva et al, Gokdemir et al, Aggarwal et al and Kunju et al while Jain et al and Sandeep et al found a lower incidence of Epstein pearls in their studies.[4,6,10,14-16]

Erythema toxicum are yellow-white papulo-vesicular lesions that develop primarily on trunk, arms and legs. Each lesion is surrounded by an erythematous area giving it a flea-bitten appearance. Immaturity of pilo-sebaceous follicles plays a role in its development. These usually resolve spontaneously without treatment.[11] These were observed among 41.8% of neonates in our study which is similar to the observations of Jain et al and Sandeep et al while studies by Gokdemir et al, Aggarwal et al and Hogade et al observed a lower incidence of erythema toxicum.[6,10,14,16,17] Milia are superficial epidermal inclusion cysts. Mostly found in forehead, cheeks and nose as whitish papules. These resolve spontaneously. In our study, milia were observed in 40.6% of neonates which is similar to the observation of Aggarwal et al.[14] Other studies observed an incidence between 6.4% to 27%.[4,6,9,10,15-17]

Miniature puberty was diagnosed if there was hyperpigmenation of genitalia or axilla, hypertrophy of mammary glands, or large well developed genitalia in males and succulent genitalia or vaginal discharge in females.[6] Evidence of miniature puberty was found in 35.9% of neonates in our study which is similar to the observations of Gokdemir et al (43.5%) and Zagne et al (42.86%) while Jain et al observed miniature puberty as the most common neonatal dermatoses with an incidence of 71%.[1,6,10] Among congenital disorders and genodermatoses, sacrococcygeal dimple/sinus (3.1%) and benign neonatal hemangiomatoses (1.5%) were most common followed by cleft lip and cleft palate (1.2%); and pre-auricular skin tag (1.1%).

Most common acquired skin lesions observed in our study were diaper dermatitis (12.5%), Neonatal oral candidiasis (4.6%), Omphalitis (2%), Infantile

seborrhoeic dermatitis (1.2%), Neonatal scabies (0.6%), Neonatal Varicella Syndrome (0.07%) while the only iatrogenic skin lesion observed in our study was irritant contact dermatitis (1.2%). We also observed two cases of collodion babies and Neonatal Varicella Syndrome which are relatively rare findings.

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 25-30 years and neonates born via normal vaginal delivery which was statistically significant. In majority of the neonates (99.5%) there was no history of consanguinity. These findings are similar to the observations from previous studies.[4,6-10,12,16,17]

CONCLUSION

We conclude that neonatal dermatoses though not an uncommon clinical finding includes a wide variety of skin lesions. As most of these lesions are transient and self-limiting, appropriate knowledge about these might go a long way in differentiating these from pathological lesions so as to avoid unnecessary or inappropriate management. Also, timely parental counseling should be done explaining them about the benign nature of these lesions so as to allay anxiety.

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REFERENCES

1. Zagne V, Fernandes NC. Dermatoses in the first 72 h of life: A clinical and statistical survey. Ind J Dermatol Venereol Leprol. 2011;77:470-6.
2. Wagner IS, Hansen RC. Neonatal skin and skin disorders. In: Pediatric Dermatology. 2nd ed. New York: Churchill Livingstone; 1995:263-346.
3. Lucky AW. Transient benign cutaneous lesions in the newborn. In: Eichenfield eld LF, Frie-den IJ, Esterly NB, editors. Textbook of Neonatal Dermatology London: WB Saunders; 2001.
4. Sachdeva M, Kaur S, Nagpal M, Dewan SP. Cutaneous lesions in newborn. Ind J Dermatol Venereol Leprol. 2002;68:334-7.
5. Parikh DA. Neonatal skin disorders. In: Valia RG, Valia AR, editors. IADVL textbook of dermatology 3rd ed. Mumbai: Bhalani Publishing House. 2001;1:160-70.
6. Jain N, Rathore B, Krishna A. Dermatoses in Indian neonates: A clinical study. Egypt J Dermatol Venereol. 2014;34:86-92.
7. Shehab MM, Youssef DM, Khalil MM. Prevalence of cutaneous skin lesions in neonatal intensive care unit: A single center study. J Clin Neonatol. 2015;4:169-172.
8. Patel PV, Shetty VH, Shetty NJ, Varsha. Clinical study of neonatal skin lesions. Int J Res Dermatol. 2017;3(2):239-244.
9. Gorur DK, Murthy SC, Suresh T. Early neonatal dermatoses: A study among 1260 babies delivered at a tertiary care center in South India. Indian J Pediatr Dermatol. 2016;17:190-5.
10. Gokdemir G, Erdogan HK, Koslu A, Baksu B. Cutaneous lesions in Turkish neonates born in a teaching hospital. Indian J Dermatol Venereol Leprol. 2009;75:638.
11. Thomas J. Neonatal dermatoses: An overview. Ind J Dermatol Venereol Leprol. 1999;65:99-103.
12. Dash K, Grover S, Radhakrishnan S, Vani M. Clinico epidemiological study of cutaneous manifestations in the neonate. Ind J Dermatol Venereol Leprol. 2000;66(1):26-28.
13. Baruah CM, Bhat V, Bhargava R, Garg RB, Kumar V. Prevalence of dermatoses in the neonates in Pondicherry. Ind J Dermatol Venereol Leprol. 1991;57:25-28.
14. Agarwal G, Kumar V, Ahmad S, Goel P, Prakash A. A Study on Neonatal Dermatosis in a Tertiary Care Hospital of Western Uttar Pradesh India. J Community Med Health Educ. 2012;2:169.
15. Kunjukunju BP, Jayamohanan R. A clinical study of physiological skin changes in neonatal period. J Evid. Based Med Health. 2017;4(42):2553-7.
16. Sandeep B, Susheela C, Keerthi S. Cutaneous Lesions in Newborn Babies: A Hospital Based Study. Int J Sci Stud. 2016;4(5):43-9.
17. Hogade AS, Saranya D. A clinical study of cutaneous manifestations in neonates. Int J Res Dermatol. 2017;3:130-3.

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