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Original Research Article

Cutaneous findings in neonates and their socio-demographic profile: a prospective observational study

Ariba Afeeh, Ifra Rasool, Ravinder K. Gupta*, Anirudh Mahajan

Department of Pediatrics, Acharya Shri Chander College of Medical Sciences, Jammu, Jammu and Kashmir, India

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***Correspondence:**
Dr. Ravinder K. Gupta,
E-mail: urvigupta00@gmail.com

ABSTRACT

Background: A wide range of disorders can manifest as skin lesions due to the great difficulty the skin encounters while transitioning from an aqueous to a dry environment in a neonate. Among the skin conditions commonly seen in neonates are temporary benign lesions, atopic dermatitis (and associated disorders), bullous dermatoses. Aim was to study the various patterns of skin lesions in neonates and to estimate the prevalence of physiological and pathological skin lesions.
Methods: This prospective observational study was conducted in the department of pediatrics at Acharya Shri Chander College of Medical Sciences and Hospital (ASCOMS) a tertiary care hospital in Jammu. A total of 300 neonates (day 1 to day 28 of life) and having any skin lesions or manifestations born at the hospital or visiting out patient's department were included in the study. The data collected was compiled on excel sheet and was analyzed statistically by using statistical package for the social sciences (SPSS) software version 21.0.
Results: It was found that the most of the skin manifestations were observed in neonates born to multiparous mothers at term gestation and having average weight. The male to female ratio was 1.3:1. The frequency of the cutaneous manifestations were seen more in neonates born via the caesarean section.
Conclusions: It is concluded that the most common skin lesion was erythema toxicum followed by icterus neonatorum.

Keywords: Neonate, Cutaneous lesion, Erythema toxicum, Dermatologic manifestations

INTRODUCTION

In the neonatal period, cutaneous lesions are frequently seen. The neonatal period extends up to 28 days of life. When compared to adult skin, the characteristics of neonatal skin and its appendages are distinct.[1,2] Newborn skin is 40% to 60% thicker than adult skin. It produces less perspiration and has a weaker intercellular connection.[3]

A newborn's skin may exhibit a range of lesions physiological, pathological or transitory. Occasionally, it can be difficult to distinguish between a pathological and healthy response. Still, the majority of skin lesions in neonates are self-limiting and temporary.[4] Because of the extreme difficulty that skin faces when it moves from an aqueous to a dry environment, skin lesions can appear with a wide range of diseases. Neonatal dermatoses are rather common; the literature reported the prevalence of dermatoses among 96% to 99.3% of all neonates.[5,6]

Transient benign lesions, atopic dermatitis (and related illnesses), skin lesions resulting from infection, bullous dermatoses, geno-dermatoses, and postpartum symptoms are among the skin problems frequently observed in neonates.[7] Other skin lesions that are commonly observed in newborns and are physiological in nature include erythema toxicum neonatorum (ETN), vernix caseosa, cutis marmorata, acral cyanosis and erythema neonatorum,

harlequin colour change, neonatal desquamation, lanugo, sucking blisters and erosions, sebaceous gland hyperplasia, milia, miliaria, neonatal acne, transient neonatal pustular dermatosis, mongolian spots, salmon patches, and icterus neonatorum.[8]

The present study was undertaken to study the various patterns of skin lesions in neonates and to estimate the prevalence of physiological and pathological skin lesions in neonates.

METHODS

This prospective observational study was conducted in the department of pediatrics at Acharya Shri Chander College of Medical Sciences and Hospital (ASCOMS) a tertiary care hospital in Jammu for a period of 05 months w.e.f from April 2023 to August 2023 after getting clearance from the institutional ethical committee vide reference number: ASCOMS/IEC/2023/Meeting-I/25.

Inclusion criteria

Patients in neonatal age group (day 1 to day 28 of birth) and having any skin lesions or manifestations born at the hospital or visiting on outpatient department (OPD) basis, and parents ready to give inform consent were included.

Exclusion criteria

Sick neonates requiring NICU admissions, neonates with no skin manifestation, and parents not ready to give inform consent were excluded.

A total of 300 neonates were included during the study period. Neonates having any skin lesion or manifestations were enrolled in the present study. A detailed history was recorded in a structured proforma including the age of the mother, parity of mother, history of consanguinity, mode of delivery, and history of maternal illness during pregnancy. The sex, birth weight and age at the time of examination was noted in each case. Thorough examination of neonate in daylight with proper description of morphology of skin lesions was recorded. Diagnosis of disorder was based on clinical impression. Photographic records were maintained.

The data collected was compiled on excel sheet and was analyzed statistically by using statistical package for the social sciences (SPSS) software version 21.0.

RESULTS

The dermatological manifestations among the neonates are depicted in Table 1.

Table 1: Distribution of neonates according to dermatological manifestations.

Skin lesions	Frequency (N)	Percentage (%)
Birth marks		
Mongolian spot	78	26.0
Café au lait spot	8	2.66
Salmon patch	2	0.6
Physiological cutaneous lesions/changes		
Icterus neonatorum	104	34.66
Milia	66	22.0
Epstein pearl	52	17.33
Lanugo hair	46	15.33
Physiological peeling	23	7.66
Transient non-infective lesions		
Erythema toxicum	112	37.33
Miliaria	32	10.66
Infectious lesion		
Impetigo	12	4.0
Eczematous eruptions		
Nappy rash	6	2.0
Cradle cap	2	0.6
Developmental defects		
Sacral dimple	12	4.0
Sacral hypertrichosis	3	1.0
Others		
Umbilical granuloma	4	1.33
Neonatal alopecia	2	0.66
Collodion baby	2	0.66

Table 1 depicted that erythema toxicum was the commonest skin manifestation observed in 112 (37.33%) followed by icterus neonatorum observed in 104 (34.66%), Mongolian spot among 78 (26.0%), Milia in 66 (22.0%), and Epstein pearl among 52 (17.33%). Other skin manifestations seen were lanugo hair among 46 (15.33%), Miliaria in 32 (10.66%), physiological peeling in 23 (7.66%), impetigo and sacral dimple in 12 (4.0%) neonates each, nappy rash in 6 (2.0%), umbilical granuloma in 4 (1.33%), sacral hypertrichosis in 3 (1.0%), cradle cap, neonatal alopecia, collodion baby and salmon patch in 2 (0.66%) each.

Table 2: Distribution of commonest skin lesions in association with study variables.

Socio demographic variables (n)	Skin lesions (n)					
	Erythema toxicum (112)		Icterus neonatorum (104)		Mongolian spot (78)	
	N	%	N	%	N	%
Gender						
Male (172)	70	63	42	53.9	62	60
Female (128)	42	38	36	46.1	42	40

Continued.

Socio demographic variables (n)	Skin lesions (n)					
	Erythema toxicum (112)		Icterus neonatorum (104)		Mongolian spot (78)	
	N	%	N	%	N	%
Birth weight						
Average (216)	66	59	52	67	80	77
Low (84)	46	41	20	26	24	23
Mode of delivery						
Caesarean (172)	74	66	47	61	62	60
Normal (128)	38	34	25	32	42	40
Gestation						
Preterm (38)	14	13	8	10	7	7
Term (236)	80	71	60	77	74	71
Post-term (26)	18	16	4	5	23	22
Parity						
Primigravida (132)	50	45	26	33	40	38
Multigravida (168)	62	55	46	59	64	62
Skin lesions (n)	**Epstein pearl (52)**		**Milia (66)**		**Lanugo hair (46)**	
	N	**%**	**N**	**%**	**N**	**%**
Gender						
Male (172)	30	58	40	77	28	61
Female (128)	22	42	26	39	18	39
Birth weight						
Average (216)	46	88	50	76	34	74
Low (84)	6	12	16	24	12	26
Mode of delivery						
Caesarean (172)	36	70	44	67	28	61
Normal (128)	16	31	22	33	18	39
Gestation						
Preterm (38)	8	15	12	18	7	15
Term (236)	38	73	48	73	34	74
Post-term (26)	6	12	6	9	5	11
Parity						
Primigravida (132)	22	42	44	67	32	70
Multigravida (168)	30	58	22	33	14	30

In neonates more than one dermatological manifestation was present

Table 2 describes the commonest skin lesions in association with other study variables. In our study it was observed that most of the skin lesions were observed in male neonates born to multiparous women at term gestation with average weight via caesarean section.

DISCUSSION

In our study there was male predominance with the male to female ratio 1.3:1. Majority of the neonates were born at term and most of the subjects had average weight. These findings are similar to the study conducted by Haveri and Sachdeva et al where the male to female ratio was seen to be 1.18:1 and 1.34:1 respectively.[3,9]

Our study found that the majority of the mothers of neonates were multipara and caesarean section was the most common mode of delivery. These results are consistent with the study conducted by Sachdeva et al and Choudhary et al.[9,10]

The various skin manifestations observed in our study were erythema toxicum (37.33%) icterus neonatorum (34.66%) mongolian spot (26.0%), milia (22.0%), Epstein pearl (17.33%), Lanugo hair (15.33%), miliaria (10.66%), physiological peeling (7.66%), impetigo and congenital fossa (4.0%) each, nappy rash (2.0%), umbilical granuloma (1.33%), sacral hypertrichosis (1.0%), cradle cap, neonatal alopecia, collodian baby and salmon patch (0.66%). These outcomes are consistent with the study conducted by Ekiz et al reported that prevalence of skin lesion was common among males. Cutis marmorata and genital hyperpigmentation were found to be much more common in preterm neonates. Mostly in babies delivered vaginally, caput succedaneum, transitory newborn pustular melanosis, and cyanosis were observed. There have been cases of erythema toxicum neonatorum in neonates delivered after caesarean section. While caput succedaneum was substantially greater in babies of primiparous mothers, Mongolian patches and erythema

toxicum neonatorum were significantly more common in those of multiparous mothers.[11]

In one of the studies performed by Ferahbas et al found that the most common cutaneous lesion among neonates was xerosis/desquamation 39.5% followed by sebaceous hyperplasia 31.8%, transient toxic erythema 30.9%, salmon patch 19.2%, Mongolian spot 13.2%, cutis marmorata 10.6%, suction bulla 10.3%, miliaria 8.5%, hypertrichosis 7.8%, and dermatitis (irritant, seborrheic, or diaper) 2.1%.[12]

Limitations

Our study is a hospital-based study, and not a community-based study. It does not take into consideration the variables like temperature, climate and the seasonal variations. Duration of study is 5 months which is a shorter duration.

CONCLUSION

The present study concluded that the most common skin lesions among neonates were erythema toxicum, icterus, Mongolian spot, milia, Epstein pearl, Lanugo hair, milaria, physiological peeling, impetigo, sacral dimple, nappy rash, umbilical granuloma, sacral hypertrichosis, cradle cap, neonatal alopecia, scabies, collodion baby and salmon patch.

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Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. Moosavi Z, Hosseini T. One-year survey of cutaneous lesions in 1000 consecutive Iranian newborns. Pediatr Dermatol. 2006;23:61-3.
2. Chang MW, Orlow SJ. Neonatal, Pediatric and adolescent dermatology. In: Wollf K, Fitzpatrick TB, Goldsmith LA, Katz SI, Gilchrest BA, Paller AS, et al, editors. Fitzpatrick's dermatology in general medicine. 7th edition. New York: McGraw Hill. 2008;935-55.
3. Haveri FTTS, Inamadar AC. A Cross-Sectional Prospective Study of Cutaneous Lesions in Newborn. Int Scholary Res Notices. 2014;360590.
4. Asha GS, Shilpa VK, Ramesh M, Revathi TN. Clinical Study on Prevalence of Cutaneous Lesions in New Born Babies in India. J Clin Exp Dermatol Res. 2016;7(5):1-11.
5. Rivers JK, Frederiksen PC, Dibdin C. A prevalence survey of dermatoses in the Australian neonate. J Am Acad Dermatol. 1990;23:77-8.
6. Uzma A, Zaman T, Rashid T, Jahangir M. Cutaneous manifestations in 1000 Pakistani newborns. J Pak Assoc Dermatol. 2010;20:199-205.
7. Alper J, Holmes LB, Mihm MC. Birthmarks with serious medical significance: nevocullular nevi, sebaceous nevi, and multiple cafe au lait spots. J Pediatr. 1979;95(5):696-700.
8. Serdaroglu S, Çak B. Physiologic skin findings of newborn. J Turk Acad Dermatol. 2008;2(4):82401.
9. Sachdeva M, Kaur S, Nagpal M, Dewan S P. Cutaneous lesions in new born . Indian J Dermatol Venereol Leprol. 2002;68:334-7.
10. Choudhary P, Mehta RD, Ghiya BC, Sharma D. A Clinical Study of Physiological Cutaneous Manifestations in Early Neonates at a Tertiary Care Center in Western Rajasthan. Indian J Paediatric Dermatol. 2022;23(1):43-8.
11. Ekiz O, Gül U, Mollamahmutoğlu L, Gönül M. Skin findings in newborns and their relationship with maternal factors: observational research. Ann Dermatol. 2013;25(1):1-4.
12. Ferahbas A, Utas S, Akcakus M, Gunes T, Mistik S. Prevalence of cutaneous findings in hospitalized neonates: a prospective observational study. Pediatr Dermatol. 2009;26(2):139-42.

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