EUROPEAN JOURNAL OF BIOMEDICAL AND PHARMACEUTICAL SCIENCES
http://www.ejbps.com

ISSN 2349-8870
Volume: 4
Issue: 12
567-570
Year: 2017

A PROSPECTIVE STUDY ON MORBIDITY OF DERMATOLOGICAL MANIFESTATIONS IN NEONATES

[1]*Dr. Lakshmi Charan C. and [2]Dr. Unnikrishnan S. R.

Department of Pediatrics Sree Balaji Medical College and Hospital Chromepet, Chennai, Tamilnadu, India.

*Corresponding Author: Dr. Lakshmi Charan C.
Department of Pediatrics Sree Balaji Medical College and Hospital Chromepet, Chennai, Tamilnadu, India.

Article Received on 01/10/2017 Article Revised on 21/10/2017 Article Accepted on 11/11/2017

ABSTRACT

Introduction: In neonates skin maturation occurs with development of stratum corneum. It becomes fully keratinised in utero between 32 and 34 weeks of gestational age. Hence premature neonates have impaired barrier functions leading to infections. Most skin lesions are benign, transient and require no specific treatment. Blistering disorders and erythroderma are rare which associated with morbidity and mortality require appropriate management. **Aims and Objectives:** To study the physiological and transient, infectious, iatrogenic, congenital, various pattern of dermatological lesions upto 28 days of life. **Materials and Methods:** New born was examined within 24 hours of birth for skin lesions. Neonates was examined for development of skin lesions in hospital stay and advised to revisit if they have any cutaneous lesions in 28 days. As lesions occur, their morphology, distribution and progression was noted down. **Results:** In neonates, transient lesions are frequently seen. Among the lesions, erythroderma toxicum neonatorum shows the highest frequency (n=212) 88.3% followed by mongolian spots(n=210) 87.5%, milia (n=120)50%, miliaria (n=110)45.8%. Physiological skin changes includes physiological jaundice seen in 80% of cases. **Conclusion:** Our study results indicate physiological transient skin conditions are commoner than pathological skin conditions in newborns within 28 days. It helps to increase the awareness of skin lesions in neonates.

KEYWORDS: Neonates, transient skin lesions, physiological, pathological.

INTRODUCTION

Neonatal skin maturation occurs with development of the stratum corenum, it was fully keratinised in utero between 32 and 34 weeks of gestational age. Premature neonates have impaired barrier functions and susceptible to the infections.[1] Most skin lesions like erythema toxicum neonatorum, acne neonatorum, transient neonatal pustular melanosis, milia, miliaria are benign, transient and requires no specific treatment. Although, they are benign in nature, they are major source of parental concern. These may be transient and physiological occuring in normal neonates or they present as birth marks which denote underlying serious systemic disorder. Neonatal skin presents with distinct characteristics compared to children and is in need of special care.

Birth marks are divided into 3 groups, pigmented, vascular, abnomral tissue development. Large multiple congenital melanocytic nevi require evaluation of neurocutaneous melanosis. Benign birth marks such as mongolian spots, dermal melanosis, hemangioma of infancy, port wine stain, do not require specific treatment. Dermal sinuses tail, dimples and multiple lesions of any type should be identified which require further investigations like ultrasonography/MRI of spinal cord and brain involvement.

Currently the evidence based guideline for neonatal skin care recommends 2 – 4 weeks of skin care product application to prevent excessive trans epidermal water loss in preterms which deliver before 32 weeks of gestation.

Though the neonatal care has radically changed over the years, skin care has lagged behind and in need for invasive monitoring and procedures.[2]

MATERIALS AND METHODS

This study was conducted over a period of 1 year from March 2016 to March 2017 in the Department of Pediatrics, Sree Balaji Medical College, Chromepet, Chennai. Cases were both inborn and out born neonates admitted at NICU, post natal ward who developed skin lesions during hospital stay. Neonates visited the out patient deparment for skin lesions or and for other ailments.

Informal consent was first obtained from the babys attenders and cases were recorded by daily visit to ward.

Every new born was examined within 24 hours of birth in detail for skin lesions and examined every day for the development of any skin lesions during the hospital stay and advised to revisit if they develop cutaneous lesions within 28 days. Findings were noted down in pre tested proforma which includes antenatal details and post natal events. The data collected was analysed for evaluation of skin lesions in new borns and results were expressed as descriptive statistics through usage of simple percentage or ratios.

RESULTS

In our study 240 new borns were included, out of 240, 116 were male and 124 were female babies. All the cases divided into 6 broad groups based on etiological conditions (Table – I). Many babies had more than one skin condition.(table1).

Table – 1: Etiological Conditions.

No	Etiology	Total number of lesions (n)
1.	Transient	767
2.	Physiological	520
3.	Infectious	30
4.	Developmental anomalies	23
5.	Iatrogenic	8
6.	Miscellaneous	14

Most commonly occuring conditions were Transient Dermatosis (767), physiological changes were (520). total 30 cases were Infectious, 23 of Developmental origin, 8 were of Iatrogenic origin, 14 were miscellaneous.

Table – 2: Transient Skin Lesions.

No	Transient Skin Lesions	No of Cases Frequency (n)	Percentage (%)
1.	Mongolian spots	210/240	87.5%
2.	Erythema toxicum	212/240	88.3%
3.	Miliaria	110/240	45.8%
4.	Salmon Patch	25/40	10.4%
5.	Milia	120/240	50%
6.	Sebaceous Hyperplasia	52/240	21.6%
7.	Physiological Cutis Marmorata	20/240	8.3%
8.	Harlequin color changes	4/240	1.6%
9.	Neonatal acne	10/240	4.1%
10.	Sucking blister	4/240	1.6%
	Total	767	

Transient skin lesions were the commonest skin conditions in our study, total 767 transient lesions were noted, out of which mongolian spots were the most common transient lesion seen (table 2).

Table – 3: Infectious Conditions.

S No.	Infections	No. of cases	Percentage (%)
1.	Impetigo	8/240	3.3%
2.	SSSS	3/240	1.2%
3.	Blepharitis	-	-
4.	Omphalitis	20/240	10.4%
5.	Intertrigo	25/240	10.4%
6.	Cadidiasis Oral thrush Perianal	 35/240 15/240	 14.5% 6.25%
	TOTAL	106	

In our study we recorded 106 (44%) cases of infectious diseases, of which 31 are bacterial, 75 are fungal, oral thrush 35 cases, perianal candidiasis 15 cases (table 3).

Table – 4: Iatrogenic Conditions.

S No	Condition	Total	Percentage (%)
1.	Phototherapy Burns	3/240	1.2%
2.	Electrode Burns	3/240	1.2%
3.	Calcium Gluconate Burns	5/240	2%
	TOTAL	11	4.4%

11 cases of Iatrogenic conditions seen out of which 3 are phototherapy burns, 3 of electrode burns and 5 cases of calcium gluconate burns (table 4).

Most common lesions that was seen in first week of life were mongolian spots (at birth), Erythima toxicum, milia, miliaria, other lesions like Cutis Marmorata, Harlequin color changes had no specific age distibution.

In miscellaneous conditions 4 cases of Epidermolysis Bullosa Simplex with generalised involvement seen. Nail involvement (nail loss) seen in few nails. Oral mucosa was spared and not associated with milia formation. We recorded one case of Dystrophic Epidermolysis Bullosa where oral mucosa was involved and lesions presented around 24th day of life.

DISCUSSION

All the babies included in the study were examined according to pretested proforma on the day of birth and daily during the hospital stay. Those babies discharged were advised to revisit on development of any dermatological lesions. Neonates with cutaneous lesions in out patient department were also enrolled in this study. The detailed examination of new borns reveals a variety of dermatological conditions, some being transient, some physiological and pathological. The prevalence of neonatal dermatoses varies from 40.0% to 100% in different studies.[3]

TRANSIENT LESIONS

Total 767 transient lesions noted in the study. Mongolian spots were the transient lesions seen in our study. A total of 210 caes (87.5%) were recorded in this 180 (85.7%) were on lumbosacral region and 30(14.3%) were at atypical sites. A similar study by K Dash et al showed that 89 out of 100 had mongolian spots[3], in that 74 had on lumbosacral area, 8 on sacral area, 4 on trunk, 2 on shoulder, 1 on other area. Baruah MC et al studied 500 cases and found mongolian spots in 392 babies an incidence of 78.4%.[4]

A total of 212 (88.3%) cases of erythema toxicum neonatorum were seen in our study. out of 212 cases, 5 were recorded on 1st day of life, 97 cases were seen on 2nd day and 90 cases were seen on 3rd day of life. 20 neonates(9.4%) had during 2nd week of life. Most of the cases resolved within 14 days. Sachdeva M et al reported an incidence of 105 cases of erythema toxicum neonatorum out of 474 i.e, incidence of 21%.[5]

Miliaria were seen in 110 cases (45.8%), out of these 92(83.6%) were of miliria crystallina, 12 were M.rubra, 2 were pustulosa and 4 were M.profunda. Majority of lesions resolve by 1st week of life. Jain N et al recorded 17(28.33%), cases of miliaria.[6]

Milia were seen in a total of 120 cases(50%) over peri orbital area and cheeks. out of 120 cases 101 (84.1%) seen in term neonates. Farhana Tahseen et al in their study found 18.3% incidence in newborns.[7]

Salmon patch was seen in 35 (14.5%) in our study, Baruah MC et al reported 34.6% incidence. In the study done by Noopur jain et al salmon patch were the most commonly observed, seen in 27 (45%) and 19 (31.67%) neonates, respectively. These were observed to be more frequent in females and those with a birth weight of more than 2 kg.[8]

Sebaceous hyperplasia was seen in 52 cases (21.6%), in the study done by Ayten Farhabas et al reported the incidence of 31.8% cases of 816 new borns.[9]

Cutis marmorata was recorded in 20 cases (8.3%). Neonatal acnein 10 cases (4.1%). Suckling blister was seen in 4 cases (1.6%).

In physiological changes lanugo hair was seen in 70 cases (29.1%) in our study. In the study done by Kikkeri Narayanshetty Naveen et al Lanugo hair (60.5%) was the most frequently seen in preterm and term neonates.[10]

Physological desquamation was seen in 89 cases (37%) out of which 80 were full term (38.3%), 2 cases were pre term and only 7 cases was post term. in the study done by Rivers JK et al reported incidence of 65% in 420 neonates.[11]

In our study we recorded 106 cases (44%) infectious diseases of which 31 cases were bacterial and 75 were fungal. fungal infection presented in 75 cases with candidiasis(oral thrush). Premature babies are more susceptible to bacterial infection due to immature epidermal barrier.

Iatrogenic conditions was recorded in 11 cases (4.4%). 3 cases each of phototherapy burn, 3 cases of electrode burn and 5 cases of calcium gluconate burns. All these conditions are preventable. in the study done by Fontenele FC et al the results were lower compared to Indian and Brazilian study.[12] It was observed frequently in male, preterm, low birth weight neonates and in late neonatal period.

CONCLUSION

Skin lesions are very common in the neonatal period. Transient lesions like Erythema toxicum neonatorum were the frequently noted skin lesions followed by mongolian spots, miliaria, milia. In the present study, most of the skin lesions were transient and physiological which requires no therapy. Pediatricians and dermatologists should beaware of these skin lesions in neonatal ICU and should be able to differentiate them from serious skin conditions in order to avoid unnecessary investigations and treatment in neonates. The parents can be assured of good prognosis of these skin manifestations.

REFERENCES

1. Shehab MM, Youssef DM, Khalil MM. Prevalence of cutaneous skin lesions in neonatal intensive care unit: A single centerstudy. J Clin Neonatol. 2015; 4: 169-72.
2. Dhar S, Raychaudhury T, Banerjee R, Malakar R. Neonatal skin disorders. In: Sacchidanand S, Oberai C, Inamadar AC, editors. IADVL Textbook of Dermatology. Mumbai: Bhalani Publishing House; 2015; 266-85.
3. El-Moneim AA, El-Dawela RE. Survey of skin disorders in newborns: clinical observation inan Egyptian medical centre nursery. East Mediterr Health J. 2012; 18: 49-55.
4. Baruah CM, Bhat V, Bhargava R, Ku. Garg RB, Prevalence of dermatoses in the neonatesin Pondicherry. Indian J Dermatol Venereal Leprol. 1991; 57: 25-8.
5. Sachdeva M, Kaur S, Nagpal M, Dewan SP. Cutaneous lesions in new born. Indian J Dermatol Venereol Leprol. 2002; 68: 334-7.
6. Jain N, Rathore BS, Agarwal AK, BhardwajA. Cutaneous lesions in neonates admitted in a tertiary setup neonatal intensive care unit. Indian J Paediatr Dermatol. 2013; 14: 62-6.
7. Farhana Tahseen Taj Sameer Haveri and Arun C. Inamadar, "A Cross-Sectional Prospective Study of Cutaneous Lesions in Newborn," ISRN Dermatology, vol. 2014, Article ID 360590, 8 pages, 2014. doi:10.1155/2014/360590.
8. Dash K, Grover S, Rashakrishnan S, Vani M. Clinco-epidemiologicol study of cutaneous manifestations in the neonate. Indian J Dermatol Venereal Leprol. 2000; 66: 26-8.
9. Ferahbas, A., Utas, S., Akcakus, M., Gunes, T. and Mistik, S. (2009), Prevalence of Cutaneous Findings in Hospitalized Neonates: A Prospective Observational Study. Pediatric Dermatology, 26: 139–142. doi: 10.1111/j.1525-1470.2009.00903.
10. Kikkeri Narayanshetty Naveen, Praveen S Bagalkote, Sachin Manohar Shetty, Umesh Dixit, Cutaneous lesions in neonatal intensive care unit in a tertiary care center. Journal of Pakistan Association of Dermatologists. 2017; 27(2): 124-130.
11. Rivers JK, Frederiksen PC, Dibdin C. A prevalence survey of dermatoses in the Australian neonate. J Am Acad Dermatol, 1990; 23: 77-81.
12. Fontenele FC, Cardoso MVLML. Skin lesions in newborns in the hospital setting: type, size and affected area. Rev Esc Enferm USP. 2011; 45: 127-33.