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CUTANEOUS FINDINGS IN NEONATES IN A HOSPITAL SETTING: CLINICO-EPIDEMIOLOGICAL STUDY.

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Abstract

Background: Neonatal dermatoses by definition encompass the spectrum of cutaneous disorders that arise during the first 4 weeks of life. The appreciation of normal phenomena and their differentiation from the more significant cutaneous disorders of the newborn is critical for the dermatologists and pediatricians.

Material and methods: All inborn neonates <28 days of life including those visiting outpatient department (OPD) on follow up between June 2019 to December 2019 formed the baseline population and those with any 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: Out of 2466 neonates, 2236 (90.7%) had skin lesions. 2236 neonates, 1246 (55.8%) were male and 990 (44.2%) were female. There were 1549 (69.2%) term, 660 (29.6%) preterm, and 27(1.2%) post term neonates. 1901 (68.8%) had birth weight >2.5kg while 627 (28%) had birth weight ≤2.5kg. A total of 1609 (72%) and mothers of 21 (0.94%) neonates were < 20 years of age; 2012 (90%) in the age group of 20-30 years; 203 (9%) in the age group >30 years. 1459 (65.25%) neonates were born by normal vaginal delivery and 777 (34.75%) were born by cesarean section.

Conclusions: Incidence of neonatal dermatoses was found to be higher (55.8%) among males as compared to females (44.2%); among term babies; those with birth weight >2.5kg; those born normal vaginal delivery and those with maternal age 20-30 years.

Keywords: Dermatoses, Incidence, Neonate, Risk factors

Introduction:

The neonatal period is defined as <28 days of life. The skin of the neonate differs from that of an adult in that it is thinner and less hairy.[1] It serves an important role in the transition from the aqueous intrauterine environment to extrauterine life. The skin of the newborn rapidly adapts to the changing environment and may exhibit a variety of lesions which may be transient, physiological, or pathological.

Early recognition/differentiation of these conditions is necessary to properly diagnose the benign physiological conditions and other pathological disorders such as infections or genodermatoses, which need proper intervention and treatment.[2, 3]

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.[4] Hence the present hospital based investigation was conducted with the aim to study the clinical and epidemiological profile of Neonates presented with cutaneous findings.

Materials and methods

Study design

This cross-sectional descriptive study was conducted in the Department of Pediatrics, Darbhanga Medical College and Hospital, Bihar for June 2019 to December 2019

Inclusion criteria

- All inborn neonates <28 days of life
- Any skin lesions

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.

The study protocol was reviewed by the Ethical Committee of the Hospital and granted ethical clearance. After explaining the purpose and details of the study, a written informed consent was obtained.

Methodology

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 paediatrician after clinical examination and wherever

required dermatology consultation was done to confirm the diagnosis.

Statistical analysis

The recorded data was compiled entered in a spreadsheet computer program (Microsoft Excel 2010) and then exported to data editor page of SPSS version 20 (SPSS Inc., Chicago, Illinois, USA). Descriptive statistics included computation of percentages, means and standard deviations were calculated.

Results

Out of 2466 neonates, 2236 (90.7%) had skin lesions. Most common skin lesions observed were transient skin lesions. Various neonatal and maternal factors studied are depicted in Table 3 and 4. Out of 2236 neonates, 1246 (55.8%) were male and 990 (44.2%) were female. There were 1549 (69.2%) term, 660 (29.6%) preterm, and 27(1.2%) post term neonates. 1901 (68.8%) had birth weight > 2.5kg while 627 (28%) had birth weight ≤2.5kg. A total of 1609 (72%) and mothers of 21 (0.94%) neonates were < 20 years of age; 2012 (90%) in the age group of 20-30 years; 203 (9%) in the age group >30 years. 1459 (65.25%) neonates were born by normal vaginal delivery and 777 (34.75%) were born by cesarean section.

Table 1: Profile of cutaneous lesions in our study (Transient skin disorders)

Dermatological condition		
Transient skin disorders	N= 2236	% of neonates
Mongolian spots	1453	64.98
Epstein pearls	1118	50
Erythema toxicum neonatorum	891	39.84
Milia	888	39.71
Miniature puberty	789	35.28
Sebaceous gland hyperplasia	677	30.27
Vernix caseosa	632	28.26
Lanugo hair	586	26.20
Caput succedaneum	249	11.13
Physiological scaling of newborn	239	10.68
Miliaria	211	9.43
Transient neonatal pustular melanosis	201	8.98
Cradle cap	46	2.05
Neonatal alopecia	24	1.07
Sucking blister	19	0.84
Cephalhematoma	11	0.49
Salmon patch	11	0.49
Neonatal acne	8	0.35
Hypertrichosis	6	0.26

Table 2: Profile of cutaneous lesions in our study (Congenital disorders and Genodermatoses)

Dermatological condition		
Congenital disorders and Genodermatoses	N= 2236	% of neonates
Sacrococcygeal dimple/sinus	74	3.30
Benign neonatal hemangiomatoses	26	1.16
Pre-auricular skin tag	23	1.02
Cleft lip and cleft palate	22	0.98
Natal teeth	18	0.80
Congenital melanocytic nevus	11	0.49
Café-au-lait macules	9	0.40
Accessory finger	6	0.26

Table 3: Profile of cutaneous lesions in our study (Acquired skin disorders specific to Neonatal period)

Dermatological condition		
Acquired skin disorders specific to Neonatal period	N=2236	% of neonates
Diaper dermatitis	247	11.04
Neonatal oral candidiases	102	4.56
Omphalitis	47	2.10
Infantile seborrhoeic dermatitis	27	1.20
Neonatal scabies	12	0.53
Neonatal varicella syndrome	1	0.04

Table 4: Relationship of skin lesions with neonatal factors.

Neonatal factor	**N=2236**	% of neonates
Gender		
Male	1246	55.72
female	990	44.27
Maturity		
Preterm	660	29.51
Term	1549	69.27
Post term	27	1.20
Birth weight		
<2.5kg	627	28.04
≥2.5kg	1609	71.95

Table 5**:** Relationship of skin lesions with maternal factors.

Maternal factor	N= 2236	% of neonates
Maternal age		
<20years	21	0.93
20-30years	2012	89.98
>30yrs	203	9.07
Mode of delivery		
NVD	1459	65.25
LSCS	777	34.75

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 90.7%. The incidence of neonatal dermatoses in various studies lies between 57% and 99.3%.[4-6] 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 etal, 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 (64.98%), Epstein pearls (50%), erythema toxicum (39.85%), milia (39.71%) and miniature puberty (35.28%) 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 50% 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 39.85% 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 39.71% 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 hyperpigmentation 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 35.28% 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%.[6,10] Among congenital disorders and genodermatoses, sacrococcygeal dimple/sinus (3.30%) and benign neonatal hemangiomatoses (1.16%) were most common followed by cleft lip and cleft palate (0.98%); and pre-auricular skin tag (1%).

Most common acquired skin lesions observed in our study were diaper dermatitis (11.04%), Neonatal oral candidiasis (4.56%), Omphalitis (2.10%), Infantile seborrhoeic dermatitis (1.2%), Neonatal scabies (0.53%), Neonatal Varicella Syndrome (0.04%).

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, mothers in the age group of 20-30 years and neonates born via normal vaginal delivery which was statistically significant. 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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