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Assessment of the Effect of Some Social Factors on the Occurrence of Birth Marks in Neonates Attending Salahaldeen General Hospital

Sheren k. Hussein (1)

Zaki Muhi M. Saleh (2)

Yusra A. Mahmood (3)

Bahaa Dia Aldeen (4)*

(1) Department of Pediatric
Salahaldeen Health Directorate
Salahaldeen
Iraq

(2) Department of Pediatric
Diyala Health Directorate
Diyala
Iraq

(3) Department ofPediatric
College of Medicine
Iraqia University
Baghdad
Iraq

(4) Department of Pediatric
College of Medicine
Tikrit University
Tikrit
Iraq

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ABSTRACT

Background A newborn skin may exhibit a variety of changes during the first four weeks of life. Most of these changes are benign and self limited but others require further work up for infections etiologies or underlying systemic disorders .

The aim of current study is to assess the frequency of neonates with various skin lesions attended to pediatrics unit, dermatologic unit, neonatal care unit, or those delivered in labor room and those admitted to pediatric ward in Salahaldeen General Hospital.

Patients and method : The observational case control study involved study of 260 live newborns (160 males and 100 females) performed during the period between the first of July, 2017 to the 15th of September, 2017.

Results : The frequency of various skin lesions were (50%) for Mongolian spots, (31.1%) for milia, (6.25%) for erythema toxicum neonatorum,and (6.25%) for omphalitis.There was statistically significant relationship between skin lesions and mood of delivery, maternal health status including diabetes mellitus, pregnancy induced hypertention, urinary tract infection as risk factors, and the age of newborn babies.

Conclusion : It is concluded that most of skin lesions were physiologic about (90.66) and about (9.3%) _ were pathologic lesions. Most common skin lesions in this study were Mongolian spots, in which form about (50%).

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**Corresponding author E mail :* ah70.tucam@tu.edu.iq

Introduction

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 a neonate .The spectrum of dermatological manifestations in neonates varies from era to era and country to country. Some of the most pertinent factors influencing the pattern of cutaneous changes include climate, race, nutrition, hygiene, socio¬economic status (1). Birthmarks are a relatively common place. It is said that around 1 out of 10 babies born will have a birthmark. A birthmark may be a small mole or a larger area of pigmentation of the skin. These perfectly harmless marks may vary in size and colour; they may be bluish-gray, brown or pinkish. A birthmark may develop during gestation or in the first few months of a baby's life. These markings can also be hereditary, meaning that siblings may share not only the look and size of birthmark, but its location (2).

The aim of this study is to study frequencies of various skin lesions in the neonatal period of babies in Salahaldeen general Hospital.

Patients and method :

Following ethical approval, permission for the execution of the study, and access to the patient records were gained from the Departments of Paediatric and Gynaecology at Salahaldeen general Hospital. Parental consent before data collection and assessment of baby was indicated. The study has been conducted in Neonatal care unit (NCU) at Salahaldeen General Hospital in which all the admitted cases were delivered inside hospital,as well as in paediatric ward and paediatric out patients clinic; were also included over a 2.5 months .

The current work represented an observational case control study which was conducted during the period extending from the first of July 2017 to the 15th of september 2017, with regular working hours .

The questionnaire was developed to collect all data relevant to the aim of study. Data collection would thus comprise of two aspects, First aspect is description of the cutaneous manifestations whether present or not. and the second aspect is the relation between cutaneous manifestations and clinical status ,a dermatological consultation is requested to confirm diagnosis on need in the out patients cinic for dermatolgical diseases ,and by dermatologic consultationsfor patients amitted to paediatric ward

The study includes two components: interviewer administration of questionnaire & birth weight with newborns ages. Prior to the interview, the purpose of data collection was explained & consent was obtained. The mothers were interviewed after labour or operation according to urgency of each case. The patients records and antenatal care were taken in to consideration .

Gestational age in completed weeks was assessed by an accurate menstrual history which is measured from the first day of the last normal menstrual period and antenatal ultrasound measurements if available .

Babies were examined regarding their weight, heart rate, respiratory rate, colour, fontanelles, systemic examination of cardiovascular, respiratory and particularly nervous system in terms of muscle tone and primitive reflexes and abdominal examination for any organomegaly ,umbilical stump also examined for any signs of infection . any evidence of birth injury or anomaly was also noted. Investigations doen on pateints includes:

1.Labrotary in form of culture and gram stain.

2.Cytology in form of smear.

Results

In this study a comparison was done between the cases who had skin manifestations and controls who had no skin manifestations in relation to sex and the result was found that the total cases 160 composed of 100 (62.5%) boys, and 60 (37.5) girls. While total controls were 100 composed of 60 (60%) boys and 40 (40%) girls .

It found that There is no significant relationship between cases and controls according to sex in which the p-value more than o.o5 as shown in table no. (1).

Table (1): Relation between Cases and Controls According to Sex.

Sex	Cases		Control	
	No.	%	No.	%
Male	100	62.5	60	60
Female	60	37.5	40	40
Total	160	100	100	100

X^2=0.16, DF= 1, P value =>0.05 Not significant.

The total number of cases who were delivered by NVD were 120 babies divided into 81 (50.62%) by normal delivery. 27 (16.87%) had obstructed labor and 12 (7.5%) by assistant

delivery. The remaining 40 cases were delivered by caesarean section C/S divided into 26 (16.25%) by elective c/s and 14 (8.75%) by emergent c/s. while total number of controls was 100 divided into 85 delivered by NVD divided into 70 (70%) by normal delivery without any assistant or inductions, 5 (5%) were obstructed labor and 10 (10%) by assistant delivery.

The remaining 15 (15%) of controls were delivered by elective c/s, and no emergent c/s done. It found that there is a significant relationship between cases and controls according to mode of delivery in which the p-value less than 0.05 as shown in table (2).

Table (2): Relation between Cases and Controls According to Mode of Delivery.

MODE OF DELIVERY		Cases		Control	
		No.	%	No.	%
NVD	NORMAL	81	50.625	70	70
	OBSTRUCT	27	16.875	5	5
	ASSISTANT	12	7.5	10	10
C/S	ELLECTIVE	26	16.25	15	15
	EMEGENT	14	8.75	0	0
TOTAL		160	100	100	100

X^2=20.29, DF= 4, P value=<0.05 significant.

Regarding body weight of babies we divided body weight to two groups the first group their body weight range from 2500g to 3500g.

Table (3): Relation between Cases and Controls According to Body Weight.

Body weight	Cases		Control	
	No.	%	No.	%
2.5-3.5	130	81.25	80	80
>3.5	30	18.75	20	20
Total	160	100	100	100

X^2=0.06, DF= 1, P value =>0.05 Not significant.

There was a significant relationship between cases and controls according to maternal health status in which p-value less than 0.05 as shown in table (4).

Table (4): Relation between Cases and Controls According to Maternal Health Status.

Maternal health Status	Cases		Control	
	No.	%	No.	%
Urinary Tract Infection	80	50	10	10
Diabetes Mellitus	20	12.5	10	10
Hypertention	26	16.25	0	0
NO APPARENT DISEASE	34	21.25	80	80
TOTAL	160	100	100	100

X^2=93.47, DF= 3, P value= <0.05 significant.

There is a significant relationship between cases and controls according to neonatal ages in which p-value less than 0.05 as shown in table (5).

Table (5): Relation between Cases and Controls According to Neonatal Age.

Age of neonate	Cases		Control	
	No.	%	No.	%
24h	30	18.75	30	30
1-7 days	100	62.5	60	60
> 7 days	30	18.75	10	10
TOTAL	160	100	100	100

X^2=6.50, DF= 2, P value <0.05 significant.

There was no significant relationship between cases and controls as shown in table (6).

Table (6): Relation between Cases and Controls According to Neonatal Health Status.

Neonatal health status	Cases		Control	
	No.	%	No.	%
LETHARGY	22	13.75	20	20
ACTIVE	138	86.25	80	80
TOTAL	160	100	100	100

X^2=1.77, DF= 1, P value= >0.05 not significant.

most common site for skin lesions was the nose about 50 cases (31.25%). The second common site was back about 48 cases (30%), while the least site was thigh about 2 cases (1.25%) as shown in table (7).

Table (7): Distribution of Skin Lesions According to the Site.

Site	Lesion	
	NO.	%
Nose	50	31.25
Cheek	10	6.25
Back	48	30
Buttock	30	18.75
Thigh	2	1.25
Umbilical	10	6.25
Total	160	100

Most common skin lesion which found in this study was Mongolians spots about 80 (50%), then milia about 50 (31.25%), then erythema toxicum about 10 (6.25%) from these lesions smears were taken, eosinophillia were observed, omphalitis about 10 (6.25%) samples were taken for culture and gram stain, the results were negative, as shown in table (8) and Figure (1).

Table (8): Distribution of Skin manifestations According to the Type.

Type of skin lesion	NO.	%
Mongolian spot	80	50
Milia	50	31.25
Erythema Toxicum	10	6.25
Omphalitise	10	6.25
Total	160	100

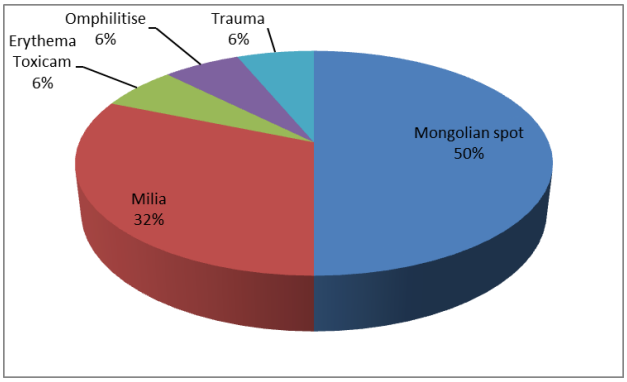

Figure (1) Distribution of skin lesions according to the type.

Mongolian spots in girls was present in three sites the first common site was the buttock in about 15 (50%), then lumbosacral about 13 (43.3%), the last site was thigh about 2 (6.67%) as shown in table (9).

Table (9): Distribution of Mongolian Spots and Sex.

Site of Mongolian spot	Male		Female	
	NO.	%	NO.	%
Lumbo sacral (Back)	35	70	13	43.3
Buttock	15	30	15	50
Thigh	0	0	2	6.67
Total	50	100	30	100

Chi-square couldn't calculate because one cell is less than 1.

There are two major type of skin lesions physiologic and pathologic character, in which physiologic skin lesions were about (90.62%) while the pathologic skin lesion forms about (9.37%) as shown in Figure (2).

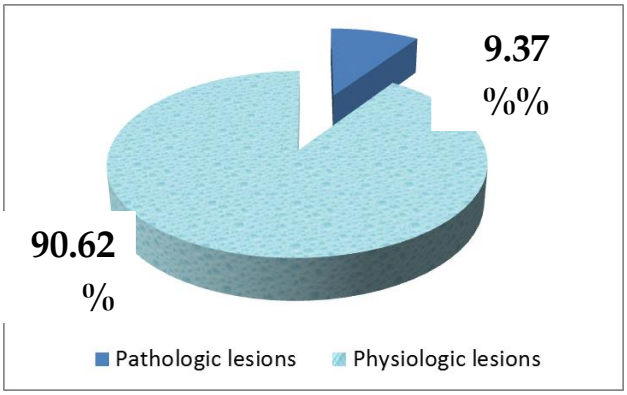

Figure (2): Distribution of lesions according to the character .

Different groups of mother's respond to skin lesion, the most common group was no respond to skin lesions and form about (50%) of mothers, while the second groups who took opinion of their relatives form about (31%) of mothers, while the third group was consulting doctors form about (13%), and the last group of mothers seek herbal therapy and form about (6%) as shown in Figure (3).

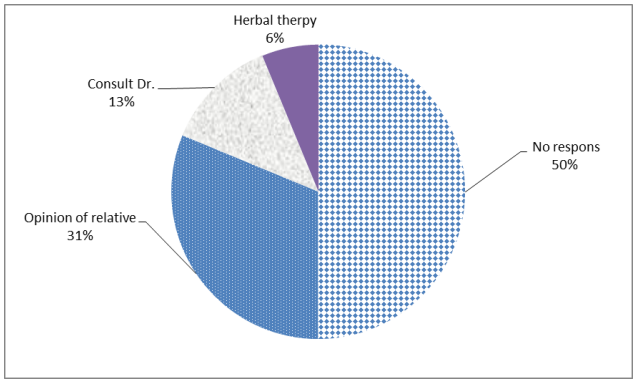

Figure (3) Distribution of lesions according to the mother response.

There was a non-significant relationship between skin lesions (pathologic, physiologic) and neonatal health status (lethargic, active) in which we have about 145 babies had physiologic skin lesions composed of twenty (13.8%) were lethargic, 125 (86.22%) were active, meanwhile about 15 babies had pathologic skin lesions composed of 2 (13.3%) lethargic and 13 (86.7%) were active. In which p-value more than 0.05, as shown in table (10).

Table (10) Distribution of Type of Lesion According to Neonatal Health Status.

Skin lesions / Neonatal health status	**Pathological lesions**		**Physiological lesions**	
	No.	%	No.	%
Lethargy	2	13.3	20	13.8
Active	13	86.7	125	86.2
Total	15	100	145	100

Yates' corrected X^2=0.12, P value= >0.05 not significant.

Discussion :

Skin manifestations are Common in the neonatal period. Frequency of different skin manifestations varies in different racial groups (20).

Erythema toxicum neonatorum (ETN) was observed in 6.25% in this study in comparison to 12% babies in Pakistanian study (18), with male predominance in both studies. Reason for such an association is not clearly under stood, but the increased level of adrenal and gonadal androgens in male newborns, may have a direct effect on hair follicle and on sebaceous gland, which are involved in pathogenesis of ETN (19).

In Japanese infants, the frequency of occurrence has been reported to be 40.8% (22) and in Indians it was 28.6% (21). Two other reports, one by Rivers (23) and another by Sarachi (24), gave frequencies of 34% and 70% respectively. They did not look for its association with gender of new born. The difference of frequency in this finding may be the result of different time of examination.

Many studies have examined the impact of maternal diseases and the use of illicit drugs, medications, and dietary supplements during pregnancy on health of new born. In terestingly, only boccardi et al. and sachdeva et al. have correlated these factors with the presence of birth marks and transient benign cutaneous lesions (25, 26). In their research they studied the prevalence of various cutaneous lesions in Spanish newborns at first three days of life (26). A data collection protocol was followed in each case to identify: Maternal factors (diseases, toxic habits, medications, and dietary supplements, Neonatal parameters: (gestational age and birth weight).They conduct a prospective study between May 2008 and November 2009 on 1000 newborns in prenatal clinic at Ferrol Healthcare area, Spain.The study shows the variations in the frequency of skin lesions according to material parameters.

Erythema Toxicum Neonatorum (ETN) is a common eruption in the neonate particularly in term infants. Mechanical trauma has been suggested as etiological factors. (27) Contrary to other reports, the incidence of ETN was (13%) in Turkish study and more common in cesarean babies (27). Mean while ETN was observed in (6.25%) in this study and most of them delivered by NVD.

This comparable result might relate to different factors as genetic, environmental or racial features which might play a role in the etiology of ENT smear taken from these skin lesions for cytology in this study, And eosinophillia were observed. The prevalence of birth marks in newborns

has been reported in various countries, Mongolian spots were the most common birth mark, as in Turkish study (20%) while in this study (50%). The frequency rate of Mongolian spots showed a marked racial difference. Various rates (0.1% in Finland, 11% in Arabs, 62% in Indian, 71% in Iran, 81% in Japan) have been documented. (20, 21, 23)

Mongolian spots were seen in (81%) babies' incidence of Mongolian spots in Irani study was almost comparable with those of other workers (20, 21, 23, and 28). Mongolian spots was found in over (90%) of Native American and Asian babies (18). They had no relationship to any disease or babies to any disease or mode of delivery. In Irani study a Total of (54%) cases of ETN were examined, the incidence average from 30 to 70 % of newborn in different studies. The variations in the different observation may be attributed to the fact that the babies were followed up for more than (5) days in some studies (25, 26, 27, 28).

Conclusion : It is concluded that most of skin lesions were physiologic about (90.66) and about (9.3%) _ were pathologic lesions. Most common skin lesions in this study were Mongolian spots, in which form about (50%).

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To my father and to my mother
To my family and my three sons
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