

OBSERVATIONS ON LOW BIRTH WEIGHT BABIES

Part I

by

RAMA SHRIVASTAVA,* M.S., D. K. SHRIVASTAVA,** M.D., D.C.H.,

and

B. GULATI,*** M.D.

Introduction

Recently a trend has emerged to label birth weight of less than 2,500 gm. (5½ lbs) of full term gestational age as, 'low birth weight' and the term prematurity is restricted to gestational age of less than 36 weeks. W.H.O. also supports this definition. Gellis is also of the same opinion that the term low birth weight should be clearly mentioned whenever possible. The 'small for dates' baby is also called 'dysmature baby'. The condition has been described as 'intrauterine growth retardation' and 'placental insufficiency'. When a small baby is born after term it can be labelled as 'postmaturity syndrome'. As these babies are supposed to suffer certain special complications like hypoglycaemia and respiratory distress, it was decided to study a group of these babies to evaluate functional maturity of these small babies in terms of neonatal reflexes and newer criteria of estimating foetal maturity.

Material and Methods

One hundred full term pregnancies resulting in 106 'small for dates' babies were studied from the Department of

Obstetrics and Gynaecology, Gandhi Medical College, Bhopal, between March 1969 and August, 1969. All babies born before the end of 37th week of gestation were excluded from this study.

The following anthropometric measurements were recorded: Weight in Gms., length in Cms. (crown heel and crown rump), head circumference and chest circumferences were measured. Also a detailed general examination for general appearance, alertness, movements, posture, colour, nail length and state of fontanelles was done. Neurological and birth reflexes were noted. The newer criteria for evaluation of maturity as described by Usher *et al* (1966), i.e., presence of sole creases, size of breast nodule, cartilage of the pinna, condition of external genitalia and texture of hair were recorded.

Incidence

In our series the incidence of low birth weight was 16.8%. During that period average birth weight in the hospital was 2.99 kg. (S.D. \pm 0.375 gm.). Ghosh (1969) found the incidence to be 15-30% in India. Saigal, *et al* (1968) quote an incidence of 16%.

Observations

One hundred pregnant mothers gave birth to 106 infants—four pairs of twins and one set of triplets.

*Registrar,

**Lecturer in Paediatrics.

***Prof. Obst. & Gynec., Gandhi Medical College, Bhopal.

Received for publication on 23-7-1971.

Weight of the babies is shown in Table I. Maximum number of low weight babies

TABLE I
Birth-Weight of Infants

Birth weight in Gms	No. of infants	Male	Female
1000-1250	1	—	1
1251-1500	2	—	2
1501-1750	4	1	3
1751-2000	27	14	13
2001-2250	26	9	17
2251-2500	46	25	21

weighed between 1751 and 2500 gms and majority of the babies were female though the number is small.

Length of the infants is shown in Table II. Though 61 low birth weight

TABLE II
Length of the Infants

Length in cm.	No. of cases
38-44	18
44.1-46	43
46.1-48	41
48.1-50	4

babies were below 46 cm. (average median normal is 50.2 ± 4 cm.), 17% were even less than 44 cm.

Circumference of the head is shown in Table III. In 92.4% of the cases the cir-

TABLE III
Circumference of the Infants' Head

Circumference of Head in cms.	No. of cases	
27.1-29	6	} 92.4%
29.1-31	43	
31.1-33	55	
33.1 and above	2	

cumference of the head was between 29.1 and 33 cm. i.e., within the normal limit. Average median normal being 33 cm. \pm 2 cm. Thus, the circumference of the head or neurological growth was not affected in majority of the cases.

Circumference of the chest is shown in Table IV. In this series the chest measu-

TABLE IV
Circumference of the Chest

Circumference of chest in cms.	No. of cases	% of cases
22-26	30	28.3
26.1-30	72	68.0
30.1 and above	4	3.7

rement was less than average (33 ± 2 cm.) in 96.2% of the cases.

Crown rump length is shown in Table V. The crown rump length was less than

TABLE V
Crown Rump Length

Crown rump length in cms.	% of cases
26.1-28	12.3
28.1-30	40.5
30.1-32	47.2

average in 12.3%, the average median being 30.5 cm. \pm 2 cm.

Thus by anthropometric measurements, it was found that in 106 low birth weight newborns in the present study the head circumference was within normal range in all the cases. In most of the cases, i.e. 96.2%, the chest circumference was less than normal. Total length and crown rump length of low birth weight newborns was observed to be less in 17% and 12.3% of the cases respectively.

Newer criteria for assessment of maturity: The length of finger nails in the low birth weight babies was till the tip of the

fingers in 63% and protruding beyond the finger tips in 37% of the cases.

Neurological and birth reflexes were good in 62% of the cases, fair in 42%, feeble in 5.06% and absent in 0.94%.

In 68% of the newborn, the sole creases were present in the anterior 2/3 of the foot and covered the whole foot in 32%. Thus foetal maturity was more than 36-37 weeks in 98% of the babies.

In the present study the hair of the babies were coarse and silky in all the cases which showed a maturity of over 36-37 weeks.

In 97% of the cases, some to full cartilage of the pinna was present, thereby indicating a maturity of over 37 weeks.

Out of the 49 male babies, in 96% the testicles were in the scrotum and colour of scrotal skin was light brown to dark brown in all the cases. Rugosity of the scrotal skin was present in all the cases

indicating foetal maturity. In all the 57 female babies, labia majora were large, indicating foetal maturity.

Breast nodules were found to be larger than 3 mm. in 77.2%, indicating foetal maturity over 36 weeks.

Thus considering all the above mentioned factors, 106 low birth weight babies born to 100 pregnant mothers showed a maturity of over 37 weeks' gestation.

Foetal anomalies: Congenital anomalies were found in two cases—one had arthrogryposis congenita multiplex with manus varus of both hands, fixed flexion at elbow joints with high arched palate and exophthalmia in both eyes. The birth weight of this baby was 2000 gm. This baby is alive and his muscular power is improving.

In another case the baby weighed 1470 gm. and the deformity was hydrocephalus.