

NORMS OF INDIAN BIPARIETAL DIAMETER

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SUMMARY

This study reveals the growth pattern of the foetuses amongst the middle class and lower middle class families in one of the teaching institutions, at Bombay. It identifies the growth pattern, which are comparable to the foetuses with the similar criteria in the Western world. The minor variations are due to either genetic factors, or due to slightly different environmental factors present in our group of population. One can confidently state that the standardised charts of Shefford and Filly 1982, Shabhaga 1976 and 1978, Hobbins and Winsberg 1977 and Robinson Fleming 1975 can be used without fear of going wrong.

Ultrasonography is non-ionising, non-invasive, safe and accurate method of objectively evaluating the foetal growth in utero. There are various parameters which are used to determine the growth pattern of the foetus, eg. CRL, BPD, abdominal circumference, thoracic circumference, femur length etc. Biparietal diameter is easy to take, reproduce and evaluate and is therefore the commonest diameter utilised by the sonographers to evaluate the foetal growth. With the improvement in the instrumentation, greater details of the skull contents of the foetus were possible to determine. In

order to avoid error in prediction and to improve the accuracy to the use of BPD diameter, a need for standardisation of biparietal diameter at a given plane was felt. Michael Shepard and Roy Filly from USA are the pioneer workers, in standardising the plane at which BPD can be measured and in a longitudinal study can give valuable information from which standardised charts can be made. Derivations of norms of any diameter require systematic and scientific approach, which are both time consuming and costly procedures. Standardised charts forms the basis for study of small for dates and large for dates babies in high risk cases.

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In the present series, BPD was taken at a plane suggested by Shefford and Filly (1982) at the level of the third ventricle

and quadrigemina cistern complex. The table on the near side to the inner skull BPDs were measured from outer skull table on the far side. Three readings were taken and the mean was reported. The appearance of the biparietal was oval, the distance between the midline and the skull border were symmetrical and the measurements were taken with inbuilt electronic callipers, 700 readings were made in 100 selected cases, with the rigid criteria and were statistically analysed and are presented.

The instrument used was real-time grey scale, BPDs were taken at a standardised plane as discussed above. LMP of the patient was known exactly, the patients delivered within ± 7 days of E.D.D., with the foetal weight at birth of

not less than 2500 gms. There were no maternal or foetal complications during pregnancy, labour or early post-natal period. The haemoglobin level of the patients was not less than 12 gm% at any given time of the pregnancy.

Analysis of the Results

Table 1 shows biparietal diameter versus weeks of pregnancy and 5 to 95 percentile division. The mean at 50 percentile is outlined, as shown in the figure.

Table II shows 4 weekly BPD progression in our population.

Table III shows comparison between the differed BPD growth pattern at 20, 24, 28, 32, 36 and 40 weeks of pregnancy.

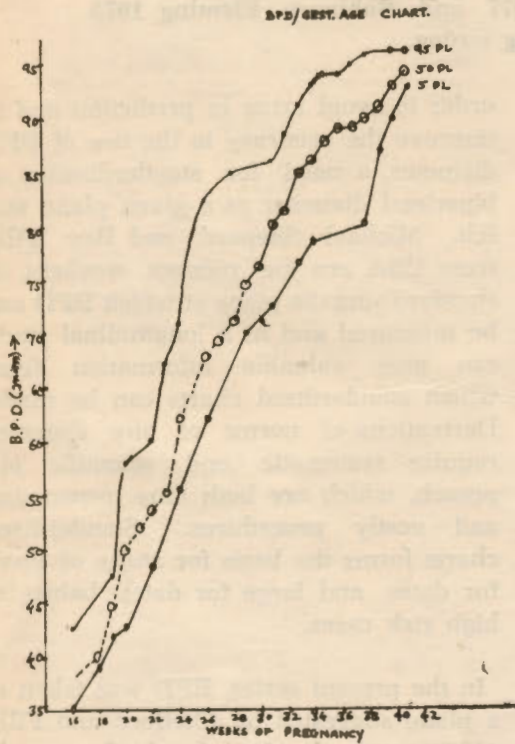


Fig. 1

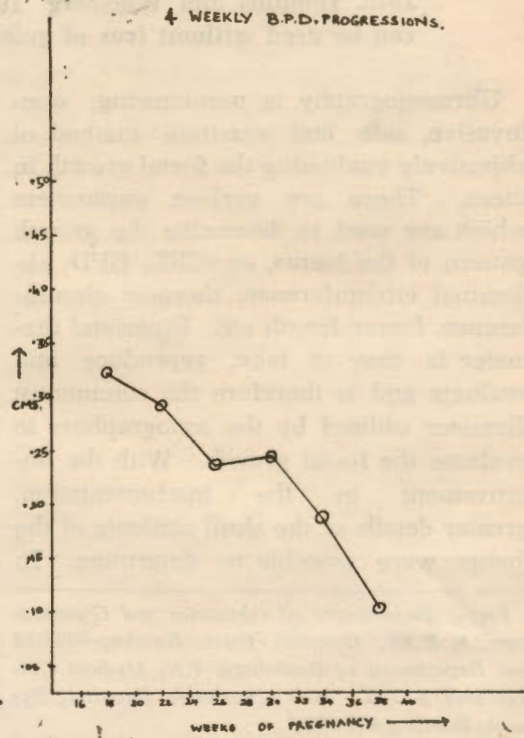


Fig. 2

TABLE III
Comparisons between Different Gestational Age Chart

Weeks	New York	Denver	Illinois	Campbell	Donald	Sabbhaga	Raval
20	—	—	—	4.9	5.3	4.75	5.01
24	—	—	—	6.15	6.4	5.9	6.2
26	6.9	6.1	6.25	—	—	—	—
28	7.5	6.6	6.8	7.6	7.5	7.1	7.1
32	8.2	7.5	7.85	8.5	8.4	8.1	8.15
36	9.25	8.25	8.6	9.1	9.2	9.0	8.91
40	9.75	8.9	9.5	9.9	9.8	9.5	9.33

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