SUMMARY AND CONCLUSIONS
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The present study "Evaluation of menstrual age versus radiological estimation of gestational age by plain skiagrams in third trimester of pregnancy" was carried out in Department of Radio-diagnosis, Maharani Laxmi Bai Medical College and Hospital, Jhansi. The present study was undertaken because of the need for more accurate prediction of foetal maturity by radiological methods. Ultrasoundography while carrying the advantage of being non ionizing suffers from the potential disadvantage of a high cost factor, and scarce availability of this modality in underdeveloped areas of Bundelkhand region had placed the responsibility for assessment of gestational age more on X-ray techniques, which are still widely employed.

A total of fifty pregnant women in their third trimester were radiographed in postero-anterior projection. All the cases included in the study were patients with a reliable knowledge of date of last menstrual period. The following parameters were recorded from the films selected for the study.

1- Femur length
2- Lumbar curve length
3- Presence or absence of distal femoral epiphysis
4- Presence or absence of proximal tibial epiphysis

**Femur length**: The mean rate of growth of femoral shaft was approximately 2 mm for each week of gestation.

**Lumbar curve length**: From 31 to 34 weeks of gestation the length of lumbar curve increased with a relatively slower rate, approximately 1 mm per week. Later from 35-40 weeks of gestation it grows at the rate of approximately 2 mm per week.

**Distal femoral epiphyseal ossification center**: From 36 weeks of gestation, a large majority of cases (90.6%) showed the presence of distal femoral epiphysis. In two cases the presence of distal femoral epiphysis was noted before 36 weeks of gestation. Thus the presence of distal femoral epiphysis is associated with an accuracy of 93.9%.

**Proximal tibial epiphyseal ossification center**: Proximal tibial ossification center was seen to be present at the earliest at 38 weeks of gestation. Thus the presence of this center is indicative of a fetal maturity of not less than 38 weeks of gestation.
Composite age estimation: Composite age estimate was obtained by taking average of two individual estimates of age. Accordingly -

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\text{Composite age estimate} = \frac{\text{Fetal age according to femur length} + \text{Fetal age according to lumbar curve length}}{2}
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The variation in age estimation, using a single measurement, is upto 3 weeks, while in composite age estimation the variability is found to be reduced to within a week. The presence of lower femoral and upper tibial epiphysis further reinforces the accuracy of estimation of gestational age by foetal measurements.

The present study permits us to conclude that using a combination of measurements and signs in an individual case, it should be possible to predict infant maturity with a high degree of accuracy.

Since radiologic examinations during pregnancy produce unwanted amounts of radiation to the fetus and to the maternal gonads, the consequences of such an exposure must be weighed against the need for accurate estimation of foetal development in order that appropriate obstetric management may be instituted.
Over all when the newer modalities like ultrasonography is not available, radiological assessment of foetal age becomes a must and accuracy of age estimation by radiological method is quite accurate.

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