Foetal Kidney Development and Amniotic Fluid Formation in Upper Egyptian Pregnancies

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Abstract:

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Background: The foetal kidney development is important for its normal function. The Amniotic Fluid Index (AFI) is used to assess the amniotic fluid volume. The main source of the amniotic fluid is the foetal urine. Aim of the Work: To establish reference values for the foetal kidney length and the AFI throughout the second and third trimesters of the normal Upper Egyptian pregnancies and to clarify the correlations between these measurements. Subject and Methods: An ultrasonographic examination was performed to measure the foetal kidney length and the AFI on 232 normal pregnant women from the 14th week to the 42nd week of gestation. The correlations between the measurements were analysed statistically. Results: The foetal kidney length increased gradually with gestation. There was a significantly positive correlation between the foetal kidney length and the gestational age. The linear regression showed that the gestational age could be assessed by using the foetal kidney length with an accuracy of ±1.078 week. From the 14th week, the AFI increased progressively until the 24th week. There was a positive correlation between the AFI and the gestational age and between the AFI and the foetal kidney length. From the 25th week to the 32nd week, the AFI demonstrated little variations. From the 33rd week, the AFI declined gradually. There was a negative correlation between the AFI and the gestational age and between the AFI and the foetal kidney length. Conclusion: The present study introduces reference values for both the foetal kidney length and the AFI in the normal Upper Egyptian pregnancies. It also discusses the correlation.

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