Anatomic peculiarities of the intrauterine development of the large fetus

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Objective
To establish the particular qualities of anatomic development of the large fetus during the II-III trimesters of the mothers without diabetes. Material of the present study included 376 cases of pregnancy by women with large fetus of Orenburg and Orenburg region ending with live birth in the period from 2009 to 2012 in the municipal perinatal center and municipal hospital № 2.

Methods
Bi-parietal diameter, fronto-occipital and head circumference were measured by ultrasound scanning. Anatomic characteristic of the body included abdominal circumference. Ultrasound anatomy of the low limbs is presented by the femur length all women had at least IV ultrasound scan in II-III trimesters. Statistical analysis of data was performed on a personal computer using licensed programs. Statistica Bass 20 for the parameters of the normal distribution the results are presented as the medium ± standard deviation. Comparison of 2 groups was performed using Student’s t-test.

Results
As a result of carried research the following averages ultrasound parameters of the large fetuses in successive stages of pregnancy were received. At the end of pregnancy the average value BPD was 96±1, 2 mm, FOD – 116, 0±1, 2 mm, HC – 334, 0±1, 8 mm, AC – 356 ± 2, 1 mm, FL – 75, 6±2, 1 mm. Fetal birth weights were distributed as follows: 323 cases (87. 2%) with a weight of 4000 - 4499g, 45 cases (12%) - 4500 - 4999g, 3 cases (0. 8%) - 5000g or more. On comparative analysis of ultrasound parameters of large fetuses, there was subsequent growth up to 28 week gestation. The maximum growth of these parameters (except AC) was at 27 - 28 weeks gestation. The significance for BPD to the specified term pregnancy compared with the period 25 - 26 weeks was 16%, the FOD – 14. 6%, HC - 13. 4%, FL – 14. 5%. The percentage increase of the AC was practically the same during II trimester. The maximum growth of these indicator was at 29-30 weeks (12, 9%) compared with 27-28 weeks. The significant decrease of the growth rate of the body up to 5% was from 33 week until the end of pregnancy. But at the end of pregnancy (39 - 40 weeks), the velocity of AC growth was significantly higher than the parameters of the head and limbs. In the III trimester the growth rate of the BPD changed wavily. Thus, after the maximum increase in the 27 - 28 weeks the growth rate decreased sharply by 6. 7% at 30 weeks. This tendency toward reduction was up to 35 weeks. In 37 - 38 weeks the growth rate of BPD was increased up to 8. 9% and declined sharply by the deadline of gestation. In III trimester FOD decreased uniformly. The growth rate of the FL decreased gradually from 29 week.

Conclusion
There was a significant increase in growth rates of the ultrasound parameters of the large fetuses at 27 – 28 weeks. The rates were variable during III trimester. The FL and FOD were exceptions as the growth rates of these two parameters decreased towards term.