Semi-automated measuring methods of nuchal translucency by TOSHIBA ultrasound units

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Objective
To evaluate the possibility of using a semi-automated measurement of nuchal translucency thickness by TOSHIBA ultrasound units to assess numerical values during the first screening examination.

Methods
To evaluate the possibility of using the technique of semi-automated measurement of nuchal translucency offered by TOSHIBA NT in 13 fetuses were measured during the first trimester examination conducted on APLIO 500 units. A specialist with FMF certificate conducted the first measurement. On the frozen image NT was measured using TOSHIBA semi automated technique. Unlike other ultrasound company’s techniques for measuring, it is required just to place the caliper on the anechoic area of NT and press the SET button. The programme outlines the borders of nuchal translucency and carries out the measurement of the thickness at the greatest width. Then, on the same image, the measurement was conducted by another specialist with FMF certificate. The mathematical processing of the results was carried out using applications Microsoft Office (Word, Excel) and Statistica 6 for Windows.

Results
The diagram presents the chart numerical values of the NT measurement results of 13 fetuses done by two doctors and semi-automated measurement NT programme TOSHIBA. The average relative error between the measurement conducted by the specialist №1 and the measurement conducted by the programme was 5.6 %. The average relative error between the measurement performed by the specialist №2 and the measurement done by the programme amounted to 7.4 %. The average relative error between the measurements of the specialists №1 and №2 was 8.3 %. Thus, in all 3 cases, the average error in NT measurements does not exceed 0.2 mm, which is consistent with the results of studies published by P. P. Pandya at all, in UOG 5 (1995) 334-337 and the error in the measurements between the two doctors and the semi-automated programme is less than the error in the measurements between the ultrasound specialists.

Conclusion
The programme of semi-automated NT measurements by TOSHIBA can be used to assess numerical values during the first trimester screening examination. To verify the information content of the method it is required to conduct a more extensive research.