Abstract

Aims: Currently, prenatal testing is based on an ultrasound examination, the testing of certain biochemical markers and most recently, also on the analysis of fragments from the extracellular DNA of the fetus in the mother´s blood. The aim of this work was to verify whether inhibin A testing during pregnancy can help improve the results of prenatal screening (risk assessment) for Down syndrome and thus reduce the number of unnecessarily invasive procedures.

Methods: The concentrations of inhibin A were measured using chemiluminescent immunoassay with paramagnetic particles on the Access system from Beckman Coulter. Risk assessments of screenings were performed using Alpha software, LMS. The results were compared in two groups of screening tests, a triple test and an integrated test. In the first case, the risks in these two groups were determined without inhibition A and included only high-risk results. Subsequently, the inhibin A results were included in the screening protocols and the existing risks were revised.

Results: The first group of screening tests (triple test) included a total of 277 pregnant women. The second group (integrated test) included 91 pregnant women. The resulting risk for pregnant women without the determination of inhibin A was higher or equal to 1:300 (triple test), respectively 1:150 (integrated test). Inhibin A was then measured in the monitored groups and the risk was recalculated. In the first group (triple test), the risk was lower than 1:300 in 152 pregnant women and in the other group (the integrated test) in 47 pregnant women. Our study has proven that adding inhibin A to the triple and the integrated test screening protocols, significantly affects the risk stratification of Down syndrome in fetuses of the pregnant population and reduces the number of positive results. Inhibin A affects the statistic distribution of risk in the group of women that have a positive screening result and it causes the results to be divided into two categories. The first group includes the results of the confirmed positive and the second group includes pregnant women whose risk result for Down syndrome in the fetus changed to negative after adding inhibin A. The difference in risk distribution was significant in both groups tested.

Conclusion. The results obtained show that the inclusion of inhibin A in screening protocols evaluates risk more precisely and reduces the number of positive results. Thereby, it also reduces the number of invasive procedures (CVS and AMC).