



First trimester combined screening test: Concentration of serum β -hCG i PAPP-A in women with insulin-dependent diabetes mellitus

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PURPOSE / OBJECTIVES

First trimester combined screening test gives early information about risk of chromosome anomalies, especially the risk of Down syndrome, as well as other, less frequent trisomies such as trisomy 18 or 13 (1,2). The aim of the research was to determine if there was any statistic significant difference in serum concentration of β -hCG and PAPP-A in pregnant women with insulin dependent diabetes mellitus (IDDM).

MATERIALS & METHODS

Study involved 104 pregnant women who were sent to perform the combined screening test by their gynecologist in the period from February 2020 to August 2020 to Department of Laboratory Diagnostics, University Clinical Hospital Mostar. Signed written informed consent was obtained from all patients. The subjects were divided into two groups, healthy pregnant women and pregnant women with IDDM diagnose. Serum parameters of combined screening β -hCG and PAPP-A were measured on COBAS E 411 analyzer (Roche Diagnostic, Germany) by electrochemiluminescence immunoassay (ECLIA) method. Data was statistically analysed in MedCalc Software's VAT Version 19.0.7.

RESULTS

Table 1. Concentration of free β hCG and PAPP-A (Mann-Whitney U test)

	Healthy		Insulin dependent diabetes mellitus		p
	median	Q1-Q3	median	Q1-Q3	
Free β -hCG (IU/L)	35,49	22,25-53,86	28,23	13,75-30,51	0,065
PAPP-A (IU/L)	3,330	2,081-5,196	2,031	1,28-4,94	0,188

RESULTS

The study included 92 healthy pregnant women (88,5%), and 12 with insulin dependent diabetes mellitus (11,5%). Median concentration of free β hCG was 28,23 IU/L and PAPP-A was 2,031 IU/L in pregnant women with IDDM diagnose. In group of healthy pregnant women median concentration of free β hCG was 35,49 IU/L and PAPP-A was 3,330 IU/L. No statistically significant difference in concentration of free β hCG hormones with regards to insulin dependent diabetes ($p=0,065$). Statistically significant difference in concentration of PAPP-A with regards to insulin dependent diabetes ($p=0,188$) was not found as well Table 1.

The aim of the research was to determine if there was any statistic significant difference in serum concentration of β -hCG and PAPP-A in pregnant women with insulin dependent diabetes mellitus (IDDM). Study showed that there was no statistically significant difference in concentration of combined screening markers β -hCG and PAPP-A found in pregnant women with IDDM compared to healthy subjects involved in the study.

SUMMARY/CONCLUSION

The present results showed that there was no statistically significant difference in concentration of combined screening markers β -hCG and PAPP-A found in pregnant women with IDDM compared to healthy subjects involved in the study.

Literature

[1] Lee FK, Chen LC, Cheong ML et al.(2013). First trimester combined test for Down syndrome screening in unselected pregnancies - a report of a 13-year experience. Taiwanese journal of obstetrics & gynecology.52(4):523-6

[2] Spencer K, Cowans NJ, Spencer CE et al.(2010). A re-evaluation of the influence of maternal insulin-dependent diabetes on fetal nuchal translucency thickness and first-trimester maternal serum biochemical markers of aneuploidy. Prenatal diagnosis.30(10):937-40.

Keywords: β -hCG, PAPP-A, first trimester combined screening test, Insulin-dependent diabetes mellitus-IDDM