PERINATAL OUTCOMES IN PATIENTS WITH TYPE 1 DIABETES MELLITUS (T1DM)

Durackova L, Korbel M, Niznanska Z, Havalda A, Nemethova B, Kosibova Z, Janac P, Dubcakova M, Kristufkova A..

1st Department of Obstetrics & Gynaecology Faculty of Medicine
Comenius University & University Hospital Bratislava, Slovakia

Introduction

The aim of study was to analyse some perinatal outcomes in mothers with type 1 diabetes mellitus (T1DM) managed in tertiary unit centre in Bratislava.

Materials and Methods

118 diabetic mothers, with singleton pregnancy, with T1DM delivered at the 1st Department of Obstetrics & Gynaecology Faculty of Medicine, Comenius University in Bratislava from January 1st 2009 to December 31th 2015 were included to the study. It was designed to compare pregnancy and neonatal outcomes between women with T1DM without vasculopathy due to White's classification (classes B and C) and T1DM with vasculopathy (classes D, F, R and H). Only singleton pregnancies were included into the study. Adequate metabolic compensation of DM was defined as a glycaemic levels 4 – 8 mmol/l and glycated haemoglobin A1c (HbA1c) according to the Diabetes Control and Complications Trial (DCCT) level 6.5 – 7.5 %. Data analysis was performed by using descriptive statistics. The relationship between variables was performed using chi-square analysis or Fisher's exact test as appropriate, non-parametric Mann-Whitney's test & Kruskal-Wallis's test. *P* values less than 0.05 were considered significant. The Statistical Package for the Social Science (SPSS) 19 was used.

Table 1. Demographic data of women with T1DM

Characteristics		T1DM women (n =118)
Maternal age - mean (years)		29.28
Preparation for pregnancy (%)		9.3
Preeclampsia (%)	moderate	22. 9
	severe	10.2
White's classification (%)	with vasculopathy	46.6
	without vasculopathy	53.39
Modality of insulin treatment (%)	IIT	52.5
	CSII	47.5
Adequate metabolic compensation (%)	glycaemic level	17.8
	HbA1c	73.7
Gestational age at the time of delivery - mean (weeks)		36.45
Mode of delivery (%)	vaginal	22. 0
	CS	78. 0
Perinatal mortality (per 1,000 total birth)		25.4

Conclusions

Successful pregnancy in diabetic women is possible, when qualified management is provided. Appropriate preparation for pregnancy and accurate metabolic balance before and during the whole pregnancy is very important for good outcomes for mother and baby too

Results

According White's classification, the distribution of T1DM mothers was 30.5 % in class C, 22.9 % in B, 18.6 % in D and F (each of them), 7.6 % in R and 1.7 % in class H. Selected demographic data of women and their infants are illustrated in **Tab. 1**.

There was significantly higher incidence of preeclampsia - 49.1 versus 19.1 % (p = 0.002) and caesarean section rate - 89.1 versus 68.3 % (p = 0.017) in the vasculopathy group compared to nonvasculopathy group. Neonatal morbidity and mortality rates were higher in vasculopathy group, but not statistically significant. Selected data of women without and with vasculopathy and their infants are illustrated in **Tab. 2**.

Table 2. Pregnancy and neonatal outcomes in diabetic women with and without vasculopathy

Pregnancy and neonatal outcomes		Diabetic women without vasculopathy n = 63	Diabetic women with vasculopathy n = 55	Statistically significance - P
Gestational age at time of delivery - mean week (range)		36.67 (25 – 40)	36.2 (28 – 39)	NS
Preeclampsia (%)	all together	19.1	49.1	0.002
	moderate	14.3	32.7	NS
	severe	4.8	16.4	NS
Preterm birth (%)		30.1	38.2	NS
Mode of delivery (%)	vaginal	31.7	10.9	0.017
	CS	68.3	89.1	0.017
Neonates birth weigth (g)	mean	3516	3376	NS
	range	870-5,060	990-4,700	NS
Weight classification of neonates (%)	LGA	54. 0	63.6	NS
	SGA	4.76	3.63	NS
	AGA	41.24	32.77	NS
Apgar score (mean)	1. min	7.79	7.85	NS
	5. min	9	9	NS
RDS (%)		17.5	30.9	NS
Hypoglycaemia (%)		44.4	44.4	NS
Hypocalcaemia (%)		14.3	5.5	NS
Hyperbilirubinaemia (%)		36.5	21.8	NS
Congenital anomalies (%)		27.0	32.8	NS
Retinopatia of newborn (%)		1.6	3.6	NS
Perinatal mortality		31,1	18,2	NS

References

White P. Classification of obstetric diabetes. Am J Obstet Gynecol 1978; 130: 228-230.
American Diabetes Association. Standards of medical care in Diabetes - 2015. Diabetes Care 2015; 38: S1-S93.
Durackova L. et al. Pregnancy et neonatal outcomes in women with type 1 diabetes mellitus. Bratisl Med J 2017; 118 (1): 56-60.