COMPARATIVE STUDY OF THREE DIFFERENT LINES OF TREATMENT FOR PREGESTATIONAL TYPE 2 DIABETES MELLITUS.

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Introduction

This form of diabetes accounts for ~90-95% of those with diabetes, previously referred to as non-insulin-dependent diabetes or adult-onset diabetes, these patients present with a combination of varying degrees of insulin resistance and relative insulin deficiency, and it is likely that both contribute to type 2 diabetes.

Maternal physiology during pregnancy, is primarily influenced by placental hormones. The maternal response is characterized by a switch from carbohydrate to fat utilization that is facilitated by both insulin resistance and increased plasma concentrations of lipolytic hormones.

The major potential complications of fetus among women with pregestational diabetes are congenital malformations, spontaneous abortion, and macrosomia.

Although. Maternal complication in women with pregestational diabetes are diabetic retinopathy and diabetic nephropathy.

Management of Diabetes Mellitus During Pregnancy done by assessing the glycemic control and intake the medical therapy which are insulin in form of premixed insulin, NPH, basal bolus insulin and oral hypoglycemic agent.

Aim of the work

To compare the results three different lines of treatment for pregestational type 2 diabetes with pregnancy that includes:

1.metformin. 2.premixed insulin.

3. basal bolus regimen without oral hypoglycemic. 4.Control group: NPH

Patients and Methods

PATIENTS: One hundred pregnant with pregestational diabetes mellitus. They subdivided equally into four groups:

- Group A: 25 patients receiving metformin - Group B: 25patient receiving premixed insulin.
- Group C : 25 patients receiving basal bolus regimen without oral hypoglycemic .
- Group D : 25 patients subjected to NPH

Inclusion criteria:

- Patients presenting with pre-gestational type 2 diabetes mellitus
- singleton pregnancy during first trimester.

Exclusion criteria: Patients presenting with Multiple gestation

- Congenital anomalies - Type 1 diabetes mellitus.
- Type 2 diabetes mellitus with insulin treatment pregestational .

METHODS:

-History: Personal data

-Medical & surgical history

-Examination

Laboratory investigations:

- Follow up every 2 weeks till delivery by: fasting blood glucose and 2 hour post prandial blood glucose.
- Follow up every 2months till delivery by: Glycosylated hemoglobin (HBA1C) .

Ultrasonography:

- Follow up of fetal weight at 28,32,36 weeks gestations.
- Amount of liquor
- Detecting cardiac anomalies.

Results

Table 1: Comparison between the different studied groups according to Average for the 15 period of Fasting blood sugar

Fasting blood sugar	Group A (n = 25)	Group B (n = 25)	Group C (n = 25)	Group D (n = 25)	F	p
Min. – Max.	106.93 – 123.80	111.13 – 117.93	99.13 – 117.60	97.73 – 116.0	19.326*	<0.001*
Mean ± SD.	114.54 ± 4.96	114.62 ± 2.01	107.56 ± 5.68	107.37 ± 5.14		
Median (IQR)	114.40 (110.9 – 117.7)	114.33 (113.0 – 116.5)	108.33 (102.3 – 111.3)	108.67 (103.0 – 111.5)		
Sig. bet. grps.	p_1=1.000,p_2<0.001*,p_3<0.001*,p_4<0.001*,p_5<0.001*,p_6=0.999					

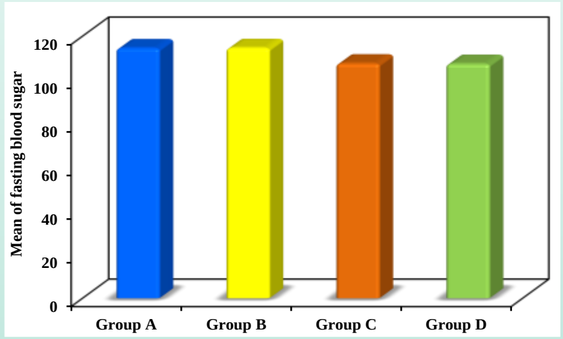

Figure 1: Comparison between the different studied groups according to average for the 15 period of fasting blood sugar

Table 2: Comparison between the different studied groups according to average of the 4 periods of fetal weight

Fetal weight	Group A (n = 25)	Group B (n = 25)	Group C (n = 25)	Group D (n = 25)	F	p
Min. – Max.	2081.3 - 2893.7	1892.7 – 2685.7	1910.67 – 2700.0	1868.7 – 2702.33	5.245*	0.002*
Mean ± SD.	2522.5 ± 261.0	2287.75 ± 241.53	2337.80 ± 235.89	2284.91 ± 240.21		
Median (IQR)	2589.0 (2353.3 - 2736.7)	2231.0 (2103 – 2457.7)	2355.33 (2148 – 2518.7)	2355.33 (2090.7 – 2444)		
Sig.bet.Grps	p_1=0.006*,p_2=0.044*,p_3=0.005*, p_4=0.888,p_5=1.000,p_6=0.871					

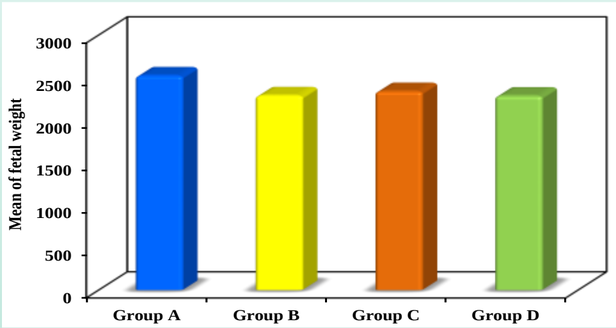

Figure 2: Comparison between the different studied groups according to average of the 4 periods of fetal weight

Conclusion

We concluded that a basal bolus insulin has produced better effects on feto-maternal outcomes and glycemic control in comparison to metformin, premixed insulin, and NPH insulin in pregestational DM.

Also, our results emphasized the importance of blood glucose monitoring among diabetic women during their pregnancy to avoid fetal and maternal problems and to improve pregnancy outcomes.

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