

Research Article



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Primary Neonatal Outcomes in the metformin and MNT group in Early Trimester with Early Gestational Glucose Intolerance

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Design and Method:

Method

A study included pregnant women at 8 to 10 weeks of gestation, divided into two groups based on their blood sugar levels of ≥ 110 mg/dl. Those with high levels ≥ 110 mg/dl received two different interventions: Metformin-MNT and MNT only. Follow-up outcomes were done until delivery.

Results

Primary Outcomes* The Adverse neonatal composite outcomes in the groups 35(37.6) vs 55(52.3) are statistically significant ($P=0.038$), but the Primary Maternal hypertension composite outcomes were non-significant (9(9.6%) vs 10(10.7%), $P=0.80$) (Table 1).

IUD/Spontaneous abortion 8-28 Weeks and stillbirth are 20 (16) and 12(9.6) in the MNT Group compared to nil in the MNT-Metformin intervention group, which is highly significant.

Conclusion: It's important to keep maternal 2-hour postprandial blood glucose (PPBG) levels below 110 mg/dl at the 10th week of pregnancy to prevent fetal hyperinsulinemia and better maternal-fetal health.

Table 1 Primary Neonatal outcomes in Medical Nutrition Therapy (MNT) + Metformin group; and MNT Group

Outcome	PPBS\geq110mg/dl, Fetal-maternal outcomes Metformin & MNT Intervention Mean \pm SD, N= 93 (%)	PPBS\geq110 mg/dl Fetal-maternal outcomes MNT Intervention Mean \pm SD, N=125 (%)	P-value
Adverse-neonatal outcomes^{*a,b,c,d,e}	35 (37.6)	55 (52.3)	0.038
Birth weight (kg.)	2.92 \pm 0.4	3.04 \pm 0.4	0.042
<2.5 kg	8(8.6)	18(19.3)	0.035
IUD/Spontaneous abortion	0(0.0)	32(25.6)	0.001
\geq 28 Weeks Still birth	0(0.0)	12(12.9)	0.002
<2.5 kg Birth weight	10(10.8)	18(19.3)	0.0003
2.5 – 2.99	35(37.6)	34(36.6)	0.87
3.0 – 3.49	39(41.9)	27(29.0)	0.07
\geq 3.45 ^a	9(9.6)	14(15.1)	0.26
Neonatal morbidity	48	80	0.001
Still-birth ^b	0(0.0)	12	0.0001
Phototherapy ^c	14(15.1)	12(12.9)	0.67
Hyperbilirubinemia	14(15.1)	12(12.9)	0.38
Hypoglycemia	4(4.3)	12(12.9)	0.036
RDS ^d	4(4.3)	5(7.5)	0.73
Preterm Birth <37th week Gestation^e	8(8.6)	12(12.9)	0.34

Ref. 1. Tiwari^a, S. Agarwal^b, R. Jain^c, P. Saxena^d, V. Seshiah^e, A. Chandrasekar. An Interventional Study for Prevention of Gestational Diabetes Mellitus and its Sequelae by Administering Metformin. Diabetes Research and Clinical Practice. 2024: 209S1111459. DOI: [10.1016/j.diabres.2024.111459](https://doi.org/10.1016/j.diabres.2024.111459)

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- **COI:** Authors declare no conflict of Interest

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