International Journal of Reproduction, Contraception, Obstetrics and Gynecology
Thammanna N et al. Int J Reprod Contracept Obstet Gynecol. 2026 Oct;15(10):4072-4079
www.ijrcog.org
pISSN 2320-1770 | eISSN 2320-1789

DOI: https://dx.doi.org/10.18203/2320-1770.ijrcog20263448

Original Research Article

Co-relation of abnormal DIPSI values to feto-maternal outcome: an observational study

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Received: 04 September 2026
Revised: 12 September 2026
Accepted: 15 September 2026

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ABSTRACT

Background: Gestational diabetes mellitus (GDM) is linked to adverse feto-maternal outcomes. This study evaluates the effectiveness of the Diabetes in Pregnancy Study Group India (DIPSI) guidelines as an affordable, one-step universal screening and diagnostic tool.
Methods: This prospective study evaluated 107 pregnant women aged 18–40. The data was collected from November 2022 to April 2024. Participants with abnormal DIPSI results underwent a confirmatory 75g WHO OGTT (2013). Third-trimester ultrasound findings and labor outcomes were analyzed.
Results: At 24–28 weeks, 51.4% of subjects were diagnosed with GDM via DIPSI and confirmed by WHO OGTT. Major maternal-fetal complications included preeclampsia (42%), fetal AC >90th centile (33.3%), preterm labor (23%), and polyhydramnios (22%). The primary delivery mode was Caesarean section (60%), driven by ERCD (34.3%) and fetal distress (18.7%). Mean neonatal birth weight was 2.94 kg. Significant neonatal morbidities included hypoglycemia (43%), phototherapy (43%), NICU admission (42%), shoulder dystocia (5.5%), and IUFD (2%). DIPSI values significantly correlated with neonatal hypoglycemia ($p<0.05$), but not with fetal AC centiles or polyhydramnios.
Conclusion: All patients with abnormal DIPSI values had at least one abnormal WHO OGTT value, demonstrating DIPSI's strong sensitivity and specificity. DIPSI serves as a cost- and time-effective single-step tool to identify GDM and enable timely intervention to improve feto-maternal outcomes.

Keywords: Gestational diabetes mellitus, DIPSI, WHO OGTT, Neonatal hypoglycemia

INTRODUCTION

The term Gestational diabetes mellitus (GDM) was first introduced by O'Sullivan. Data from the National Family Health Survey (NFHS) indicates that the self-reported national prevalence of GDM in India increased from 0.53% in 2015–16 (NFHS-4) to 0.8% in NFHS-5 (2019–2021), with the risk rising across both urban and rural populations. A 2022 systematic review and meta-analysis revealed distinct regional variations, with the highest prevalence in North (16.1%) and South India (12%), compared to relatively lower rates in the West, Central, and Eastern zones. In 1999, the World Health Organization (WHO) defined GDM as "carbohydrate intolerance resulting in hyperglycaemia of variable severity with onset or first recognition during pregnancy." In 2013, the WHO proposed a modified definition: "hyperglycaemia first detected at any time during pregnancy." Because hyperglycemia significantly increases adverse feto-maternal outcomes, lower glucose thresholds are utilized for diagnosing GDM compared to those used in the non-pregnant state.

Pregnancy induces notable adaptations in carbohydrate metabolism to ensure a continuous supply of glucose and energy to the growing fetus and placenta. Normal pregnancy is characterized by a state of peripheral insulin resistance, resulting in prolonged postprandial hyperglycaemia, hyperinsulinemia, and enhanced suppression of glucagon following a meal. This is not

driven by altered insulin clearance, as the half-life of insulin remains unchanged. Instead, it is mediated by a surge in diabetogenic hormones such as growth hormone, cortisol, human placental lactogen (hPL), progesterone, and estrogen—which peak midway through the third trimester. In a healthy pregnancy, late-gestation insulin sensitivity drops by 30% to 70% compared to non-pregnant states. To compensate, maternal beta-cells undergo expansion, increasing insulin synthesis and secretion. GDM develops when this gestational beta-cell compensation fails to overcome the inherent insulin resistance of pregnancy. GDM is associated with maternal complications such as pre-eclampsia, hydramnios and infections, while neonatal complications include hypoglycemia, transient tachypnea of the newborn (TTN), respiratory distress syndrome (RDS), and hyperbilirubinemia. Long-term risks include an increased predisposition to developing metabolic syndrome in adulthood. Also, GDM often precipitates protracted or obstructed labor, fetal macrosomia, shoulder dystocia, birth injuries, increased rates of emergency Caesarean deliveries, and both traumatic and atonic PPH.

In 2014, India's ministry of health and family welfare released the national guidelines on diagnosis and management of gestational diabetes mellitus, mandating universal screening as part of the basic prenatal package. These guidelines utilize the diabetes in pregnancy study Group India (DIPSI) criteria, which were updated in 2018.Screening is recommended at the first antenatal visit to prevent false-negative results.

Since the fetal glucose steal phenomenon can mask GDM during the second trimester, a negative initial screen mandates repeat testing at 24–28 weeks and again at 32–34 weeks in high-risk women. The DIPSI test is performed by administering 75-g oral glucose load to the pregnant woman irrespective of her fasting state. A 2-hour post-load plasma glucose value of 140 mg/dl is considered abnormal. The primary advantages of the DIPSI test include its simplicity, universal applicability without disrupting routine daily activities, absence of a fasting requirement and proven efficacy in reducing perinatal morbidity and mortality.

The clinical utility of HbA1c is limited during pregnancy due to factors such as anemia, rapid red blood cell turnover, and a lack of standardized diagnostic thresholds; its role is primarily restricted to identifying pre-existing, undiagnosed pre-gestational diabetes in the first trimester. While several oral glucose tolerance tests are advocated for confirmation, this study utilized a 75 g OGTT as a secondary diagnostic investigation for mothers who presented with an abnormal initial DIPSI result. This prospective study evaluates the clinical utility of the single-step DIPSI protocol as a tool to spot GDM early. To verify these findings, we utilize a standard 75-gram OGTT as a secondary investigation in patients presenting with abnormal DIPSI readings, matching these metabolic markers against clear third-trimester ultrasound findings and feto-maternal delivery outcomes.

METHODS

This was a hospital-based, prospective observational study conducted over an 18-month period from November 2022 to April 2024 in the Outpatient Clinic of the Department of Obstetrics and Gynecology at M.S. Ramaiah Medical College and Teaching Hospital, Bengaluru, India. Institutional Ethics Committee clearance was obtained prior to the commencement of the study, and written informed consent was secured from all participating individuals.

A total of 107 pregnant women were screened and enrolled based on the following criteria.

Inclusion criteria

Pregnant women (both primigravidae and multigravidae) aged 18 to 40 years, at any gestational age, who presented with an abnormal initial DIPSI screening result (2-hour post-load plasma glucose of 140 mg/dl).

Exclusion criteria

Women with pre-existing, known pre-gestational diabetes mellitus or overt diabetes detected in early pregnancy.

Study protocol

Antenatal mothers meeting the inclusion criteria were categorized as the study cohort. To confirm and cross-verify glucose intolerance, all participants underwent a standard 75-gram WHO oral glucose tolerance test (OGTT). Following an overnight fast, a load of 75 grams of anhydrous glucose dissolved in approximately 300 mL of water was administered. Venous blood samples were collected to measure plasma glucose levels at 0 (fasting), 1 hour, and 2 hours post-ingestion.

During the third trimester, structural fetal status was monitored via obstetric ultrasonography, with a specific focus on fetal abdominal circumference (AC) centiles and the assessment of amniotic fluid volume to detect polyhydramnios. All participants were followed through labor to document maternal, intrapartum, and neonatal outcomes.

Sample size calculation

From the hospital record it has been observed that the correlation between abnormal DIPSI values and amniotic fluid index (AFI) as an indicator of GDM was r=0.3. In the present study expecting similar results with 90% power and 95%confidence level, a minimum of 106 subjects will be required in the present study.

Statistical analysis

Data were entered into a Microsoft Excel spreadsheet and analyzed using SPSS version 22.0 (IBM SPSS Statistics). Continuous data were expressed as means and standard deviations (SD), while categorical and qualitative variables were summarized as frequencies and percentages.

To evaluate the significance of associations between qualitative variables, the Chi-square test or Fisher's exact test was applied where appropriate. Graphical representations of the data were generated using Microsoft Excel and Microsoft Word. For all statistical tests, a p value of (<0.05) was considered statistically significant.

RESULTS

The majority of the study subjects belonged to the 25–29 age group (43.0%), with an overall mean maternal age of 29.5 years. In terms of educational background, 66.0% of the patients were graduates.

An analysis of maternal body mass index (BMI) among the 107 subjects revealed that 45.0% were obese, 37.0% were overweight, and only 17.8% had a normal BMI. Regarding antenatal care and parity, the vast majority (78.5%) were booked cases, with the cohort comprising 67 multigravidae and 40 primigravidae.

Obstetric history

At the time of delivery, 82 women (76.6%) delivered at term, while 23.4% delivered preterm. Among the preterm births, 4.6% were classified as very preterm and 15.9% as late preterm. The majority of the participants had a singleton gestation (98.1%). Spontaneous conception was recorded in 86.0% of the women, while the remaining pregnancies were achieved via assisted reproductive techniques: 5.6% via ovulation induction, 6.5% via in vitro fertilization (IVF), and 1.9% via intrauterine insemination (IUI). Additionally, a family history of diabetes mellitus was present in 39 women (36.4%), and 17 women (13.1%) had a prior personal history of GDM, pre-eclampsia, or eclampsia. The mean gestational age at the time of GDM diagnosis was 25.6 weeks. Breaking down the timing of diagnosis, 5.6% of cases were identified before 20 weeks, 24.0% between 20 and 24 weeks, 12.1% between 28 and 32 weeks, and 6.1% after 32 weeks of gestation.

An analysis of the initial single-step screening among the 107 subjects showed that the majority (49.0%) had 2-hour post-load plasma glucose DIPSI values between 161 and 180 mg/dl. This was followed by 35.0% with values between 140 and 160 mg/dl, 9.3% between 181 and 200 mg/dl, and 7.5% with values exceeding 200 mg/dl. Regarding long-term glycemic control, 41.1% of the subjects presented with baseline HbA1c levels below 5.7%, 30.8% had HbA1c levels between 5.7% and 6.4% (prediabetic range), and 28.1% had HbA1c levels greater than 6.4% (suggestive of pre-existing or overt diabetes). The cross-tabulation and distribution of HbA1c levels stratified by DIPSI glucose ranges are summarized in Table 2.

Association between glycemic metrics and management strategies

Fisher's exact test was performed on the contingency data to evaluate the null hypothesis that DIPSI plasma glucose values and baseline HbA1c levels are independent. With a p-value of 0.001, the null hypothesis was rejected, demonstrating a highly significant, strong statistical association between HbA1c levels and initial DIPSI scores within our study sample.

Among the 107 subjects diagnosed with GDM, the management strategies varied based on glycemic severity: 43.9% required insulin therapy, 34.6% were managed with oral hypoglycemic agents (OHAs), and 21.5% were controlled via medical nutrition therapy (MNT) alone (Table 3). Further statistical evaluation revealed a statistically significant relationship between initial DIPSI values and the chosen management modality ($p = 0.002$), indicating that higher screening glucose values strongly correlated with the escalation to pharmacological interventions.

Antenatal complications and fetal surveillance

Concomitant maternal comorbidities included hypothyroidism requiring treatment in 24 women (22.4%), followed by cardiac disease in three participants. Other isolated medical complications included intrahepatic cholestasis of pregnancy, acute pancreatitis, uterine fibroids complicating pregnancy, and IgA nephropathy (one case each). Regarding fetal growth restrictions (FGR) and hemodynamic monitoring, early-onset FGR was identified in two fetuses, while 15 presented with late-onset FGR. Intrauterine fetal demise (IUFD) occurred in two cases, whereas the remaining fetuses demonstrated normal Doppler indices. Fetal growth mapping via abdominal circumference (AC) revealed that 33 fetuses (30.8%) had an AC above the 90th centile, while 7 (6.54%) fell below the 10th centile.

To assess the prognostic value of the initial screening, Fisher's exact test was used to cross-tabulate glycemic categories. No statistically significant association ($p=0.45$) was observed between maternal DIPSI values and third-trimester fetal AC centiles, as detailed in Table 4.

Amniotic fluid assessment and correlation with DIPSI

An evaluation of the AFI among the 107 subjects revealed that 22.0% presented with polyhydramnios, while 17.0% had oligohydramnios. A detailed breakdown of fluid volume distribution showed that 29.0% of patients had an AFI between 15 and 20 cm, 22.0% between 20 and 25 cm, and 23.0% exceeded 25 cm. Conversely, 12.1% demonstrated an AFI between 5 and 8 cm, and 4.0% had severe oligohydramnios with an AFI below 5 cm.

Statistical analysis using Fisher's exact test demonstrated no statistically significant association (p=0.457) between maternal DIPSI screening values and amniotic fluid volume categories, indicating that initial screening glucose levels were not a direct predictor of third-trimester fluid abnormalities in this cohort.

Estimated fetal weight distribution and correlation with DIPSI

Ultrasonic evaluation of growth parameters showed that 7.5% of the fetuses had an estimated fetal weight (EFW) below the 10th centile (small for gestational age). The majority (64.0%) fell within the appropriate-for-gestational-age range between the 10th and 90th centiles, while 28.0% demonstrated an EFW exceeding the 90th centile (large for gestational age).

Statistical cross-tabulation using Fisher's exact test revealed no statistically significant difference in the distribution of fetal weight centiles when stratified by maternal DIPSI screening categories (p=0.39). These findings, detailed in Table 5, indicate that initial DIPSI scores were not a significant independent predictor of third-trimester EFW variations in this cohort.

Maternal outcome in women with abnormal DIPSI

The study population presented with significant maternal and antenatal complications, including pre-eclampsia (42.1%), preterm labor (23.4%), polyhydramnios (22.4%), anemia (17.7%), oligohydramnios (15.9%), and preterm premature rupture of membranes (PPROM, 15.9%). Intrapartum and postpartum complications were similarly pronounced; 23.4% of patients experienced postpartum hemorrhage (PPH), and two women presented with placenta accreta spectrum (PAS), necessitating an emergency caesarean hysterectomy.

Regarding the mode of delivery, 60.0% of the cohort underwent Caesarean delivery divided into emergency lower segment caesarean section (LSCS) in 38.3% (n=41) and elective LSCS in 21.4% (n=23). Vaginal delivery was achieved in 38.3% (n=41) of patients, while 1.9% (n=2) underwent a caesarean hysterectomy. Gestational age stratification at the time of delivery showed that 15.8% (n=17) required a preterm LSCS, and 7.4% (n=8) had a preterm vaginal delivery.

Neonatal outcomes and glycemic correlations

The mean neonatal birth weight was 2.94 kg. Growth categorization revealed that 17.8% of neonates weighed between >3.5 and 4.0 kg, and 3.7% were macrosomic with a birth weight exceeding 4.0 kg. Conversely, low birth weight configurations included 8.4% weighing below 2.5 kg and 4.7% weighing below 1.5 kg. Among the 109 neonates evaluated, the most prevalent acute metabolic complication was neonatal hypoglycemia, occurring in 43.1% of newborns. Furthermore, 42.2% required admission to the NICU, and an identical percentage (42.2%) required phototherapy for hyperbilirubinemia. Low Apgar scores were noted at a frequency of 22.0% and 14.0% at 1 and 5 minutes, respectively. Additional severe morbidities included shoulder dystocia (5.5%), congenital anomalies (4.5%), and intrauterine fetal demise (IUFD, 1.9%). The cross-tabulation of maternal screening values against neonatal glycemic status is presented in Table 6. Evaluation via Fisher's exact test revealed a statistically significant association (p=0.0352) between initial maternal DIPSI categories and the incidence of neonatal hypoglycemia, indicating that higher maternal screening values serve as a strong clinical predictor of immediate neonatal metabolic dysregulation.

Table 1: Distribution of subjects according to gestational age at diagnosis.

Gestation age (in weeks)	Frequency	%
<=20	6	5.60
>20-24	26	24.30
>24-28	55	51.40
>28-32	13	12.10
>32	7	6.50
Total	107	

Table 2: Distribution of subjects according to HbA1c levels and DIPSI values.

DIPSI values	HbA1c					
	<5.7		5.7-6.4		>6.4	
	N	**%**	**N**	**%**	**N**	**%**
140-160	23	62.20	11	29.70	3	8.10
161-180	17	32.70	19	36.50	16	30.80
181-200	3	30.00	2	20.00	5	50.00
>200	1	12.50	1	12.50	6	75
Total	44		33		30	
%	41.10		30.80		28.10	

Table 3: Distribution of subjects according to GDM management strategy and DIPSI values.

DIPSI values	GDM management strategy					
	MNT		OHA		Insulin	
	N	%	N	%	N	%
140-160	13	37.14	15	42.86	7	20.00
161-180	10	20.41	15	30.61	24	48.98
181-200	0	0.00	4	33.33	8	66.67
>200	0	0.00	3	27.27	8	73
Total	23		37		47	
%	21.50		34.58		43.93	

Table 4: Distribution of subjects according to DIPSI values and fetal AC.

DIPSI values	Fetal AC			
	Abnormal		Normal	
	N	%	N	%
140-160	10	27.03	27	72.97
161-180	23	44.23	29	55.77
181-200	3	30.00	7	70.00
>200	4	50.00	4	50.00
Total	40		67	
%	37.38		62.62	

Table 5: Distribution of EFW by DIPSI values.

DIPSI values	Expected fetal weight (EFW)			
	Abnormal		Normal	
	N	%	N	%
140-160	10	27.03	27	72.97
161-180	21	40.38	31	59.62
181-200	3	30.00	7	70.00
>200	4	50.00	4	50.00
Total	38		69	
%	37.38		62.62	

Table 6: Distribution of neonatal hypoglycemia by DIPSI values.

DIPSI values	Neonatal hypoglycemia			
	No		Yes	
	N	%	N	%
140-160	26	27.03	11	72.97
161-180	28	40.38	24	59.62
181-200	2	30.00	8	70.00
>200	4	50.00	4	50.00
Total	60		47	
%	37.38		62.62	

DISCUSSION

In recent years, the screening, diagnosis, and management of GDM have evolved significantly. Research consistently demonstrates that untreated carbohydrate intolerance during pregnancy leads to elevated maternal morbidity and poor neonatal outcomes, whereas early screening and targeted intervention drastically reduce the risks of pre-eclampsia, intrauterine demise, stillbirths, macrosomia, caesarean deliveries, polyhydramnios, and neonatal metabolic disturbances. This prospective observational study evaluated pregnant women aged 18 to 40 years who screened positive via the DIPSI oral glucose challenge test and were confirmed using the 2013 WHO OGTT criteria. The findings reinforce that GDM patients face a heightened risk for unfavourable pregnancy outcomes, but

timely diagnostic pathways can optimize both maternal and neonatal health.

Advanced maternal age emerged as a notable risk factor for GDM development in this cohort, with 43.0% of the screen-positive patients falling between 25 and 29 years of age and 38.0% between 30 and 35 years. These age distributions closely match the observations of Sathiamma et al who reported that 42.5% of their GDM cohort belonged to the 25–29 age bracket and 22.0% were between 30 and 34 years.[1] Interestingly, our study noted a higher prevalence of GDM among women with a graduate degree or above (66.4%). This socioeconomic and educational trend aligns with data published by Rajput et al who demonstrated that a higher educational degree correlates with an elevated risk of GDM, peaking at 14.3% among graduates.[2] Regarding parity, multigravidae accounted for 63.0% of the GDM cases compared to 37.0% in primigravidae, reinforcing the findings of Seshiah et al who established a significant increase in GDM prevalence in relation to higher gravida status.[3]

Maternal habitus and family medical history also played a major role in GDM susceptibility. In this study, 37.4% of the subjects were overweight and 45.0% were obese, a distribution that tracks the statistical significance established by Rajput et al between rising body mass index (BMI) and GDM prevalence ($p<0.001$).[2] A positive family history of diabetes mellitus was present in 36.4% of the patients, supporting the data from Chanda et al which identified a family history of diabetes as a significant, independent predictor of GDM (aOR 1.82; 95% CI 1.08 to 3.06).4 While the majority of our participants conceived spontaneously (86.0%), 14.0% conceived via assisted reproductive technology (ART); an elevated risk of GDM within IVF pregnancies has been thoroughly documented in meta-analyses by Pandey et al and Cai et al.[5,6] The peak window for screening and diagnosis using the single-step DIPSI test was between 24 and 28 weeks of gestation (51.4%), mirroring the mean gestational diagnostic windows of 26.15±1.27 weeks and 27.9±5.56 weeks reported by Abichandani et al and Balaji et al respectively.[7,8]

A highly significant statistical correlation was observed between elevated baseline HbA1c levels and abnormal DIPSI results ($p<0.01$). This strong association is heavily supported by Shrivastava et al who noted that the vast majority of DIPSI-positive patients (93.33%) had elevated HbA1c levels (>5.5\%).[9] In terms of delivery timelines, 76.6% of our subjects delivered at term, while 23.4% experienced preterm deliveries (with 4.6% below 32 weeks, 2.8% between 32 and 34 weeks, and 15.9% between 34 and 36+6 weeks). This aligns with Goldman et al who observed that preterm labor rates did not vary significantly between controlled GDM and non-GDM cohorts (7.2% vs. 9.3%).10 Fetal surveillance via ultrasound revealed that 31.0% of the fetuses had an abdominal circumference (AC) above the 90th centile and 28.0% had an EFW exceeding the 90th centile. This rapid late-trimester acceleration of fetal growth matches the prospective cohort data by Brand et al which demonstrated that while GDM fetuses were smaller at 12–16 weeks, they showed significantly increased AC and EFW measurements from 24 weeks until delivery.[11]

Amniotic fluid abnormalities and maternal comorbidities further complicated the clinical course. Polyhydramnios was observed in 22.0% of our pregnancies, which compares favorably to the polyhydramnios rates reported by Makwana et al Conversely, 16.0% of the subjects presented with concomitant oligohydramnios and fetal growth restriction (FGR).[12] This dual finding can be attributed to co-existing pre-eclampsia in these mothers, a complication pattern similarly observed by Swarnlata et al who reported oligohydramnios in 6.0% to 8.5% and FGR in 14.2% to 15.0% of their GDM cohort.[13] Additionally, concomitant maternal conditions in our study included hypothyroidism in 22.4% of the participants and anemia in 17.7%, though broad literature reviews paradoxically indicate that GDM is generally less common in individuals with iron deficiency anemia.

The delivery outcomes in our study revealed a high rate of surgical intervention, with 59.7% of the 107 subjects undergoing a caesarean section (38.3% emergency LSCS and 21.4% elective LSCS), while 38.3% delivered vaginally (including 11.0% requiring instrumental assistance) and 2.0% underwent a Caesarean hysterectomy. The leading indicator for a caesarean section was an elective repeat caesarean delivery (ERCD, 34.3%), followed by fetal distress (19.0%), Caesarean delivery on maternal request (CDMR, 14.0%), non-progress of labor (12.0%), cephalopelvic disproportion (6.0%), and malpresentation (4.0%). Additionally, 3.0% of the cohort underwent a scheduled LSCS specifically for a large-for-gestational-age (LGA) fetus following thorough risk-benefit counselling. These delivery dynamics are consistent with data from Dwarakanath et al who reported a 57.0% total LSCS rate split equally between elective and emergency indications (28.5% each), with fetal distress and failure to progress serving as the primary drivers.[14]

Regarding neonatal profiles, the mean birth weight in our study was 2.94 kg, with the majority of newborns weighing between 2.5 and 3.0 kg (39.3%), followed by 22.4% between 3.0 and 3.5 kg, and 17.8% between 3.5 and 4.0 kg. Macrosomia (birth weight (>4 kg) was present in 3.7% of the neonates, all of whom were delivered via caesarean section. This birth weight trend closely replicates the data from Sathiamma et al who reported an identical mean birth weight of 2.9 kg with most infants falling into the 2.5–3.0 kg range. Neonatal hypoglycemia was the most common acute metabolic complication, affecting 43.0% of the infants in our cohort. This high metabolic susceptibility is strongly corroborated by Martha et al who observed a 39.0% neonatal hypoglycemia rate alongside an increased risk of NICU admission.[15] Finally, low Apgar scores at 1 and 5 minutes were seen in 22.0% and 14.6% of infants respectively,

while respiratory distress syndrome (RDS) developed in 6.5%. Birth trauma in the form of shoulder dystocia occurred in 5.5% of cases (with affected birth weights spanning 3.1 to 4.0 kg), closely aligning with Esakoff et al who reported a 1.6% shoulder dystocia rate specifically in GDM infants weighing over 4 kg.[16] Structural congenital anomalies were documented in 4.5% of the infants, including single cases of fetal anencephaly, Down's syndrome, duodeno-jejunal obstruction, hydrocephalus, and coarctation of the aorta.

CONCLUSION

In conclusion, data from this study reinforce that GDM is significantly associated with an increased risk of adverse feto-maternal outcomes, including maternal pre-eclampsia, polyhydramnios, preterm labor, and postpartum hemorrhage. On a neonatal level, it frequently precipitates acute morbidities such as hypoglycemia, hyperbilirubinemia requiring phototherapy, and high rates of intensive care admission. Given India's status as a global epicenter for type 2 diabetes, implementing universal screening is critical. The single-step, 75 g oral glucose challenge test endorsed by the DIPSI guidelines provides an accurate, simple, and high-sensitivity screening and diagnostic tool that should be deployed at the first antenatal visit. For high-risk women with a negative initial screening, risk stratification mandates repeat testing at 24–28 weeks and again at 32–34 weeks to avoid the masking effects of the fetal glucose steal phenomenon.

Achieving tight, timely glycemic control whether through maternal body mass index (BMI) optimization, medical nutrition therapy (MNT), oral hypoglycemic agents (OHAs), or prompt insulin therapy—is imperative to secure a successful pregnancy and avert adverse perinatal complications. Furthermore, the postpartum window offers a crucial opportunity to break the intergenerational cycle of metabolic disease. Comprehensive counselling at discharge must focus on the necessity of a 75g oral glucose tolerance test (OGTT) six weeks postpartum to track maternal glycemic status. Because preventive medicine effectively begins before birth, short-term intensive glycemic care yields lifelong health dividends, reducing the long-term risk of obesity, impaired glucose tolerance, and type 2 diabetes mellitus in both the mother and her children.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

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Cite this article as: Thammanna N, Sivasambu GD, Urvashi. Co-relation of abnormal DIPSI values to feto-maternal outcome: an observational study. Int J Reprod Contracept Obstet Gynecol 2026;15:4072-9.