The Journal of Obstetrics and Gynecology of India

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Volume 75 Issue No.4 July/August 2025

EDITORIAL

SYSTEMATIC REVIEWS/META-ANALYSIS

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	Objective To assess the maternal and perinatal outcomes among women with preclamsia with or without metformin supplementation in addition to usual care. **Method** We searched for publications indexed in PubMed, Web of Science, Psyc INFO, and CINAHL databases using a combination of terms such as "metformin" AND "preeclampsia" OR "hypertension" AND "gestation." **Results** Four empirical studies were identified as relevant to our study. We discovered that the incidence of severe preeclampsia was significantly lower in those who received metformin than in those who did not (12.1% vs. 20.7%, aOR 0.38, 95% CI 0.18–0.81). Metformin treatment significantly reduced the incidence of preeclampsia (P=0.04) and intrauterine growth restriction (P=0.035) compared to the control group. One week after taking metformin, maternal sEng and sFLT-1 levels were considerably reduced. **Conclusions** Our findings reveal that Metformin significantly reduced the frequency of superimposed preeclampsia and associated factors in a pregnant woman with chronic hypertension. When compared to other drugs, metformin is more likely to avoid pregnancy-related hypertension disorders. The small number of studies studied, combined with their clinical diversity, make it impossible to generalise these findings to larger groups. Therefore, well designed randomised trials on the use of metformin for the prevention and treatment of pre-eclampsia are essential.

ORIGINAL ARTICLES

Gynecology

Kamal M. Zahran **Moustafa M. A. Ahmed** **Tarek A. Farghaly** **Azza A. Elsayed** **Ihab M. El-Nashar**	**Triptorelin 0.1 mg as a Luteal Phase Support in Antagonist Intracytoplasmic Sperm Injection Cycles** **Abstract:** **Background** Transvaginal progesterone is used to aid throughout the luteal phase. Administering a dose of gonadotrophin-releasing-hormone analogues (GnRHa) six days following OPU in GnRH antagonist cycles might cause

	rise in pituitarygonadotropins (luteinizing hormone (LH) and follicle-stimulating hormone (FSH)), leading to rise in steroid synthesis (estradiol (E2) and progesterone (P)) by the corpora lutea (CL). This work aimed to contrast the effect of lipopolysaccharides (LPS) with adding GnRHa to progesterone P, at day six after ovum pickup versus P alone, on the clinical pregnancy rate. **Methods** This open labeled randomized controlled trial study was carried out at women health hospital (WHH), Assiut University on 150 women with antagonist controlled ovarian hyperstimulation protocol (COH). Individuals had been categorized into two groups: Study group: include women who obtained 0.1 mg of GnRH agonist "triptorelin" at day 6 after OPU in addition to (P) since day of oocyte pickup (OPU) compared with the control group: administration of P only since (OPU) as LP support. **Results** Women who received GnRHa 0.1 mg & P as LPS were reported significant higher progesterone level, beta human chorionic gonadotropins (BHCG) level, fetal pulsation, implantation rate, clinical pregnancy rate, biochemical pregnancy rate, ongoing pregnancy and live birth rates contrasted to control group ($P<0.05$). **Conclusion** Adding GnRHa to P as LPS is associated with significant higher progesterone level at day 7 after OPU BHCG day 14 of embryo transfer, clinical pregnancy rate, biochemical pregnancy rate, implantation rate, ongoing pregnancy rate, and live birth rate.

Obstetrics

M. Sanjana **K. B. Suma** **H. V. Soumya**	**Comparison of Sub-foveal Choroidal Thickness in Patients with Hypertensive Disorders of Pregnancy Versus Normotensive Pregnant Women in Third Trimester** **Abstract:** **Background** Hypertensive disorders of pregnancy (HDP), is a leading cause of morbidity and mortality in both the mother and the fetus. These disorders often lead to significant systemic and ocular changes, particularly in the choroidal vasculature. The sub-foveal choroidal thickness (SFCT) may provide critical insights into these changes and serve as a non-invasive marker for assessing the severity of HDP.

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	Objective The study aimed to compare the SFCT in patients with HDP versus normotensive pregnant women in their third trimester and to correlate SFCT with the severity of hypertension. **Methods** This cross-sectional study was conducted at JSS Hospital, Mysuru, involving 100 pregnant women in their third trimester, divided into 51 cases (HDP group) and 49 controls (normotensive group). SFCT was measured using spectral domain optical coherence tomography (SD-OCT). Data was analyzed and SFCT values compared between the two groups using mean arterial pressure (MAP). **Results** Results showed significantly higher SFCT in the HDP group (229.76 μm) compared to controls (173.45 μm), with a p-value<0.001. The HDP group also had a notably higher MAP (115.07 mmHg vs. 87.63 mmHg), and a positive correlation (r=0.541, p<0.001) was found between MAP and SFCT. **Conclusion** The study demonstrates that SFCT is significantly increased in patients with HDP, correlating positively with MAP. Further studies are recommended to explore the broader clinical applications of SFCT in HDP.
Abhinav Kumar **J. Muthukrishnan** **Ankita Patel** **Burle Chaitanya Kiran**	**Maternal and Fetal Outcomes in Gestational Diabetes Mellitus Treated with Metformin with or Without Insulin** **Abstract:** **Background** Gestational Diabetes Mellitus (GDM) is linked with a multitude of adverse perinatal outcomes. There is a want for standard guidelines regarding the usage of Metformin in GDM. We aimed to study the perinatal outcomes in women diagnosed with GDM treated primarily with Metformin with or without Insulin. **Methods** We conducted a randomized controlled pilot study. with a total of 75 women, divided into three groups: GDM treated with Metformin with or without Insulin (Group M), GDM on Insulin alone (Group I), and healthy

	pregnant women as controls (Group H), with 25 subjects in each group. At delivery, fetal and maternal outcomes were documented. **Results** The mean age in groups M, I and H were 27.4, 26.2, and 27.3 years respectively. The baseline mean HOMA-IR were 3.9 and 4.1 for Group M and Group I, respectively (p-0.560). The mean fetal birth weight was 2.95±0.54 kg, 2.8±0.41 kg, and 2.97±0.65 kg in Groups M, H, and I, respectively (p=0.527). The mean newborn HOMA-IR in Groups M and I was 1.8±0.4 and 1.7±0.5, respectively (p=0.185). The adverse events in newborns were 20% (n=5), 16% (n=4) and 16% (n=4) in Groups M, H, and I respectively (p=0.403). The incidence of caesarean deliveries was 40% (n=10), 48% (n=12) and 24% (n=6) in Groups M, H, and I respectively (p-0.253). **Conclusion** The study revealed identical maternal and fetal outcomes in women treated with Metformin as the primary drug compared to conventional treatment with Insulin in GDM.
Sumita Saroj **Hemraj R. Narkhede** **Rahul Chavan** **Anand Karale** **Nutan Wanjare**	**A Comparative Study Between Continuous and Interrupted Suturing of Rectus Sheath Closure in Caesarean Section Patients at a Tertiary care Teaching Hospital** **Abstract:** **Background** Caesarean delivery may be followed by several complications, surgical site infection (SSI) being one of them. The rate of SSI ranges from 3 to 15% worldwide (1–6). SSI is associated with a maternal mortality rate of up to 1.33%. (3) It places physical and emotional burdens on the mother and her family. **Aim** Study aimed to compare incidence of incisional SSI in two techniques of rectus sheath closure: the conventional continuous method and intermittent in patients undergoing caesarean section. **Methods** Comparative observational study of total 578 patients who underwent caesarean sections was enrolled in the study. These were divided into two equal groups of 289 each and assigned as either continuous or intermittent

	rectus sheath closure group. Standard surgical steps and post-operative care given to all. Wound complications were analysed in both groups. **Result** Out of total 578 LSCS studied, we have found 47 SSI (8.1%); 10 (3.4%) SSI found in intermittent rectus sheath closure group which is less than in continuous group, 37 (12.8%). Intermittent closure group is associated with less induration, pain at the wound site, serous discharge, and spontaneous superficial dehiscence. Resuturing need was less in intermitant group but significant difference not noted between the two groups (p=0.651). **Conclusion** Intermittent suturing of rectus sheath is associated with a lower incidence of SSI and fewer clinical manifestations compared to continuous suturing in caesarean section. Adopting the intermittent suturing technique for rectus sheath closure would significantly reduce post-operative complications like wound discharge, wound dehiscence, and improve patient outcomes.
Siri Ganesh **G. S. Jyothi** **K. S. Poojashree**	**Accuracy in Fetal Weight Estimation by Ultrasound: A Comparative Study of Hiwale and Hadlock Methods in a Tertiary Care Hospital** **Abstract:** **Background** Of all the methods available for fetal weight estimation, ultrasound-based estimation is the commonly used noninvasive and widely available technique. Different population-based models use a combination of fetal measurements for the estimation of fetal weight by ultrasound. Models developed for non-Indian populations give erroneous fetal weight estimates when used for Indian populations. Therefore, there is an immense need to develop an Indian-based model for sonographic fetal weight estimation. This study assesses the fetal weight from different available formulae and compares them with the actual birthweight. **Methodology** This was a prospective study of 154 women assessed by ultrasound within a week of delivery. Ultrasonogram was done and head circumference, biparietal diameter, abdominal circumference and femur length were measured and estimated fetal weight was calculated using Hadlock's formula and Hiwale formula. Actual birth weight of the baby was measured after the delivery. Estimated fetal weight predicted by each formula was compared with respective neonatal actual birth weight.

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	Results Out of 154 pregnant women included in the study, 92.8% were of average reproductive age-group, i.e., 20–34 years with minimum age being 18 year and maximum age is 42 year. Birth weight ranged from 780 to 4200 gms, with a mean of 2619.6. Low birthweight babies constituted 34.3% (N=53). In our study, when weight was calculated using Hiwale method nearly 25.3% of cases had overestimated and 74.7% had underestimated the fetal weight, out of it 45.5% of cases were within the range of±10% of the actual birthweight. The difference between mean estimated fetal weight and mean actual birth weight was 194.5 g. **Conclusion** Hadlock's method of fetal weight estimation was found to be more accurate.
Kh. Jitenkumar Singh **Md. Asif Khan** **Krishna Kumar** **Nongzaimayum Tawfeeq Alee** **Saurabh Sharma** **Jeetendra Yadav** **Ravleen Kaur Bakshi** **Reema Mukherjee**	**Identification of Spatial Hot spots Clustering and Geographically Weighted Regression Analysis to Assess Predictors of Cesarean Section Delivery in Northeastern States, India** **Abstract:** **Background** It is difficult to achieve health related Sustainable Development Goals when a higher proportion of birth delivery occurs through cesarean section (CS) than vaginal delivery without considerable medical benefits. This study aims to identify the spatial hot spot clustering and determinants of cesarean section in northeastern states, India. **Methods** The study utilized data from the fifth round of the National Family Health Survey (NFHS-5, 2019–2021), which included responses from 34,222 mothers who delivered live births in the five years preceding the survey. The study investigated spatial hot spot clustering of CS prevalence using Getis-Ord Gi* statistics and applied multiscale geographically weighted regression (MGWR) to identify spatial clusters in the relationships between predictor variables and CS delivery. **Results** The study identified spatial hot spot clustering of CS rates in districts of Sikkim, western and southern Tripura, eastern and western Assam, and central Manipur. MGWR results indicated that significant determinants of CS include maternal age (30–49 years), first birth order, highest

	educational level, high body mass index, and highest wealth quintile, with regression coefficients varying significantly by district in this region. **Conclusion** The study found that CS rates vary by clusters in the districts of northeastern states of India. It suggests that piloting educational interventions for pregnant women and regularly monitoring CS facilities could be initial strategies to better understand and address the higher CS trends in these regions.
Pallavi Chandra Ravula **Anisha Gala Shah** **Gunjan Bansal**	**Pregnancy Outcomes in Women with Super Obesity** **Abstract:** **Introduction** Women with high Body Mass Index (BMI) are at increased risk of maternal and perinatal complications. These complications range from diabetes, hypertensive disorders, preterm births, increased rates of cesarean births, anesthesia related challenges, macrosomic fetuses, fetal anomalies, stillbirths, postpartum hemorrhage and surgical site infections. In this study, maternal and perinatal outcomes of women with BMI>50 kg/m2 from a single center are presented. **Aims and Objectives** The primary objective was to determine the risk of maternal and fetal complications in super obese pregnant women. The secondary objective was to study the incidence of super obesity in the study population. **Methodology** This was a retrospective cohort study conducted over eleven years (January 2013–December 2023) at Fernandez Hospital, a tertiary perinatal care center with approximately 8000 births per annum. Data were sourced from electronic medical records. The study group included women with singleton pregnancies with BMI≥50 kg/m2, birthed at the center and the control group included all other women. Results The overall incidence of super obesity (BMI≥50 kg/m2) was 1 in 1000 births. On comparing women with various BMI ranges, there was a significant increase in maternal complications such as chronic hypertension, pregnancy induced hypertension, pregestational diabetes mellitus, gestational diabetes mellitus and hypothyroidism ($p<0.001$) as the BMI increased. Super obese women experienced high rates of cesarean section (54%, $p=0.009$), fetal growth abnormalities like small for gestational age (12%, $p=0.017$), large for gestational age (17%, $p<0.001$) and stillbirths (1%, $p=0.001$).

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	Conclusion Adverse maternal and perinatal outcomes are directly proportional to maternal obesity. This emphasizes that these women should be managed at a dedicated clinic for comprehensive multidisciplinary care.
Vandana Swami **Vatsla Dadhwal** **K. Aparna Sharma** **Vanamail Perumal** **Anubhuti Rana** **Neha Sahay** **Jyoti Meena** **Vidushi Kulshrestha**	**Pulmonary Vein PI, Cardiac Function and Remodeling in SGA Fetuses`** **Abstract:** **Background** To investigate the myocardial performance index (MPI), global sphericity index (GSI) and pulmonary vein pulsatility index (PVPI) changes in FGR fetuses in an Indian population. **Method** In this prospective observational study, 70 fetuses from 26 weeks to term were recruited into two groups: 35 fetuses with appropriate growth (controls) and 35 with EFW <10th centile, which were further classified into SGA (n=14) and FGR (n=21) based on vessel Doppler parameter (umbilical artery PI>95th centile, CPR<5th centile). PVPI, MPI and GSI were measured and compared among groups. **Result** Mean PVPI was increased in FGR 0.91±0.23 compared to controls 0.79±0.19 (p=0.021) and showed an increasing trend across groups—controls, SGA and FGR. The mean GSI was decreased in FGR 1.16±0.12 compared to controls 1.33±0.33 (p=0.047), indicating a more globular heart. Though the mean MPI did not show a statistically significant difference between the groups, its component ET (ejection time) was shorter in FGR 158.28±17.81 compared to controls 165.54±13.78 (p=0.047). **Conclusion** Growth-restricted fetuses undergo cardiac remodeling due to hemodynamic redistribution and show a decreased global sphericity index, indicating a more globular heart. Additionally pulmonary vein Doppler changes like increased PVPI reflect atrial dynamic changes which can be used as an early predictor of compromise as these occur before DV changes.

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Abstract:

Background

GDM is an intermediate phase in a woman's life that certainly poses a high risk of type 2 diabetes. Maternal health affects the health of offspring, a precursor of the vicious cycle of diabetes that continues through generations. Knowing the causative factors of GDM is important to breaking this cycle.

Objective

To study the risk factors of GDM in Indian women.

Method

The observational study database records from 2022 to 2023 from 11 different centres across India. We included pregnant women diagnosed with GDM with any OGTT criteria and excluded women with pre-existing diabetes.

Results

A total of 431 women with GDM were included in the study. 166 women were diagnosed with GDM in the 3rd trimester, followed by 235 women in the 2nd trimester, and 30 women in the 1st trimester of pregnancy. Those detected with GDM during the 1st trimester had a BMI of 27.9 kg/m2, followed by 28.3 and 29.3 kg/m2 in 3rd trimester. Multigravida showed a positive correlation with a family history of T2D (0.04), previous history of GDM (p-value<0.001), history of stillbirth (p-value<0.001) and hypertension (p-value 0.03).

Conclusion

Pre-pregnancy BMI and women's age at family planning are two important risk factors for the prevention of gestational diabetes.

CASE REPORTS

Obstetrics

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Abstract:

Objective

To determine different clinical, hormonal and biochemical parameters among all four phenotypes of women with PCOS in Eastern India that may help in identifying and intervening the at risk group of women going to develop metabolic syndrome.

Methods

This is a cross-sectional study involving women from Eastern India, suffering from PCOS attending Gynaecological OPD at IPGMER, Kolkata. Consecutive 126 PCOS women recruited, diagnosed using revised Rotterdam criteria 2003, were categorized into four different PCOS phenotypes. Demographic, clinical, biochemical, endocrine and metabolic parameters were analyzed, using SPSS 11.0.

Results

The differences in the levels of Fasting Insulin, glycosylated hemoglobin (Hb A1C), Triglyceride, Cholesterol, high density lipoprotein cholesterol, Total Testosterone, Anti-Müllerian hormone and insulin resistance were statistically significant across the four groups. The prevalence of obesity, abnormal of lipid profile, insulin resistance were highest in phenotype B. Prevalence of metabolic syndrome was much higher in phenotypes A and B (19.51% and 20.0%) compared with phenotype C and D (7.69% and 7.41%).

Conclusion

It's important to recognize PCOS phenotypes, correct the hormonal and metabolic disorder in time to rescue them before PCOS becomes a full blown metabolic syndrome.

Venus Bansal
Vikas Bansal

Changing Dynamics of Management in Fetus Near Viability at 23 Weeks to a Successful Outcome

Abstract:

Fetus near viability approaching hospitals for care is increasing in number in India. However the lack of evidence and experience may make an obstetrician reluctant to treat fetuses of 22 to 26 weeks gestation. The present case demonstrates the intact survival of a 23.5 week-old baby with a multidisciplinary approach. Moreover, we have tried to summarize our hospital protocol for obstetrics and neonatal management to optimize the outcome.

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