**The Journal of Obstetrics and Gynecology of India**

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**Volume 76 Issue No.1 January /February 2026**

**Special Issue on Innovation in Obstetrics and Gynecology**

## EDITORIAL

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| **Sujata Dalvi** | **Innovations in OBGYN: Transforming 21st Century Practice**<br><br>**Abstract:**<br><br>Innovations in the health care system are drivers to carry it forward. With Artificial Intelligence, personalized medicine, digital health and remote monitoring, it is advancing at faster pace. Advances are the way forward, reshaping the module of practitioners and patients. Landscape of Obstetrics & Gynaecology has transformed from pelvic examinations, paper charts, USG machines in clinic to digital tools that can increase patient care, improve diagnostic accuracy and streamline clinical workflow. Modern technologies complement traditional clinical skill while addressing women's health issues. The present- day clinician will be able to integrate technology with clinical touch in the best interest of the patient. Clinicians can take a lead in innovations rather than just being care givers. Research environment, dedicated funds, platform to showcase new ideas can go long way for health care advances. |

## PRESIDENTIAL ADDRESS

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| **Bhaskar Pal** | **From the desk of Dr. Bhaskar Pal: President FOGSI 2026** |

## REVIEW

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| **Dov Feldberg**<br>**Nikhil Purandare**<br>**Eytan Barnea**<br>**Edgar Mocanu**<br>**Togas Tulandi**<br>**Goknur Topcu**<br>**Ivonne Diaz**<br>**Jaideep Malhotra**<br>**Akira Iwase**<br>**Ajey Bhardwaj**<br>**Jackline Akol**<br>**Chittaranjan Purandare** | **Global Review on the Use of AI in IVF Laboratories**<br><br>**Abstract:**<br><br>The global use of AI in IVF laboratories has revolutionized reproductive medicine, improving efficacy, precision and outcomes for patients. AI technologies including machine learning, image recognition and reproductive analytics, are being utilized to optimize various stages of IVF from embryo selection to personalized treatment. In embryo culture, AI algorithms analyze images to identify the most viable embryos and enhancing implantation success rate and reducing the need for embryonic invasive procedures. AI tools are also used to predict patients' responses to Ovulation Inductions enabling more personalized and effective protocols. Despite these advancements, the global adoption of AI in IVF laboratories presents challenges. Variability in the quality of AI systems, deferring regulatory environments and access disparities between countries hinder widespread equitable implementation. Ethical |

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| | considerations such as ensuring unbiassed data sets and protecting patients' privacy are critical area of concern. Furthermore, the integration of AI must be accompanied by appropriate staff training and regulatory oversight to maintain high clinical standards. A global review of AI use in IVF laboratories is crucial to ensure the ethical, safe and Powered by Editorial Manager® and ProduXion Manager® from Aries Systems Corporation effective application of this technology in reproductive medicine. As AI continues to play a growing role in enhancing diagnostic accuracy, treatment protocols and patients' outcomes it is imperative to establish universal standards, guidelines and best practices. A coordinated global review will help address disparities in access to AI technologies, promote collaboration, mitigate risks of bias and safeguard patients' privacy, ultimately advancing the field of assisted reproduction on a global scale. |

## MINI REVIEW


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| **Abhay Dalvi** | **Training in Minimal Access Surgery: A Perspective**<br><br>**Abstract:**<br><br>Minimal access surgery (MAS) represents the third major revolution in surgical practice after anaesthesia and antisepsis. Despite its widespread adoption, structured training in MAS has lagged behind, often leaving postgraduate curriculum incomplete. This manuscript explores the evolution of MAS training, highlighting the unique challenges of eye-hand coordination, depth perception, and reliance on camera system. Various training modalities including endotrainers, animal and cadaveric models, simulators, observer ships, and credentialing programmes are critically examined. The emergence of robotic surgery introduces new skill sets and assessment tools, necessitating comprehensive curriculum that integrate simulation, team coordination, and structured certification. Future horizons point towards affordable robotic systems, virtual reality, and AI-powered feedback, making training more realistic and accessible. A structured, credentialed approach remains essential to ensure safe surgical practice and optimal patient outcome. |


## ORIGINAL ARTICLES

**Gynecology**


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| **Leena Mehrotra**<br>**Khetaji Bhurji Sodha**<br>**Hina Firdos**<br>**Magan Mehrotra** | **Case Series of 72 Robot-Assisted Benign Gynecological Surgeries on a Novel Modular Robotic Platform**<br><br>**Abstract:** |

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| | **Background**<br>Robotic assisted surgery has attained widespread acceptance in the past two decades as the robotic platform provides 3D vision, tremor filtration and increased dexterity with upto 7 degrees of freedom. This original article is dedicated to providing an impartial assessment of robotic technology, elucidating our insights gained from 72 gynaecological surgeries conducted with a novel modular robotic system in a tertiary care hospital.<br><br>**Methods**<br>A meticulous examination of 72 robotic benign gynaecological surgeries was undertaken, wherein average operative time, estimated blood loss, postoperative hospital stay, intraoperative and postoperative complications, and conversion rates were subjected to retrospective scrutiny.<br><br>**Results**<br>A wide spectrum of benign gynecological pathologies could be dealt with using the robotic platform with acceptable operative time, blood loss and post-operative complications. The average operative time for our first 25 cases was compared with the subsequent 47 cases, this difference was not found to be statistically significant (p value=0.28) suggesting that there does not appear to be a significant learning curve for a trained laparoscopic gynecologist in transitioning to robotic gynecological surgeries.<br><br>**Conclusions**<br>Robotic benign gynecological surgery is feasible and safe. The novel modular robotic platform gives the advantages of an open surgeon's console, enhanced degrees of freedom of movement of instruments and stability. Robotic benign gynecological surgery appears to offer reasonable post-operative recovery with acceptable intra and post-operative complication profile. |
| **Sangeeta Kumari**<br>**Kamna Datta**<br>**Ashok Kumar** | **Comparative Analysis of Traditional and Vaginoscopic Approach in Patients Undergoing Diagnostic Hysteroscopy**<br><br>**Abstract:**<br><br>**Objective**<br>To compare Vaginoscopic hysteroscopy and Traditional Hysteroscopy in terms of pain during the procedure, time taken for the procedure, and success of the procedure.<br><br>**Methods**<br>Comparative observational study done at ABVIMS and Dr RML Hospital between August 1, 2022, and February 29, 2024, in which hundred |

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| | women of reproductive age group planned for diagnostic hysteroscopy were randomized in two<br>groups: group A undergoing traditional hysteroscopy (50 patients) and group B undergoing vaginoscopic hysteroscopy (50 patients).<br><br>**Results**<br>The total pain score was calculated for each group; it was found to be significantly lower in vaginoscopic technique ($p<0.001$). The mean time was 5 min 5 s for traditional hysteroscopy and 6 min 45 s for vaginoscopic hysteroscopy with no significant difference statistically. There was no statistically significant difference in success rates in both the groups.<br><br>**Conclusion**<br>The vaginoscopic approach is a better tolerated and less painful technique and therefore should be preferred over the traditional hysteroscopy. |
| **Suha Akhtar**<br>**Pinki Pandey**<br>**Pragati Diwedi**<br>**Alok Dixit**<br>**Roopak Aggarwal**<br>**Savita Agarwal**<br>**Kailash Kumar Mittal** | **P16, Ki67 and P63 Expression in Cervical Neoplasia: A Diagnostic Bridge Between Preinvasive and Invasive Lesions**<br><br>**Abstract:**<br><br>**Background**<br>Cervical cancer remains a leading cause of morbidity and mortality among women globally, especially in low and middle-income countries (LMICs), where early detection and screening programs are limited. Immunohistochemical (IHC) markers such as p16, Ki67, and p63 have shown potential in enhancing diagnostic accuracy in cervical lesions. This study aimed to evaluate and compare the expression of these markers in preinvasive and invasive cervical lesions and correlate them with clinicopathological features.<br><br>**Methods**<br>A retrospective study was conducted on 209 histologically confirmed cervical biopsy specimens collected between 2016 and 2022. The cases included cervical intraepithelial neoplasia (CIN I–III), squamous cell carcinoma (SCC), adeno-carcinoma, and poorly differentiated malignancies. Clinical data including age, symptoms, parity, and smoking history were reviewed. Immunohistochemistry for p16, Ki67, and p63 was performed, and expression patterns were statistically analyzed across different lesion grades.<br><br>**Result**<br>CIN I (44.5%) and SCC (42.6%) were the most common diagnoses. The mean age increased with lesion severity (CIN<br>I: 44.91 years; SCC: 51.14 years; $p<0.001$). AUB and smoking were more prevalent in SCC cases (51.97% and 53.25%, respectively). P16 expression increased with lesion grade (Grade 3 in CIN I: 0%; SCC: |

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| | 29.87%; p<0.001). Ki67 showed high expression (2+or 3+) in 100% of SCC cases (p<0.001). P63 expression was strong in all SCC and CIN III cases but absent in adenocarcinomas (p<0.001).<br><br>**Conclusion**<br>The immunohistochemical markers p16, Ki67, and p63 demonstrate statistically significant expression patterns correlating with lesion severity and histological subtype. These biomarkers are valuable adjuncts in distinguishing low-grade from high-grade and invasive cervical lesions, supporting their use in routine diagnostic practice. |
| **Mansi Chugh**<br>**Bharti Goel**<br>**Alka Sehgal**<br>**Sunita Dubey**<br>**Uma Handa**<br>**Dinesh Walia** | **Revolutionizing Community-Based Cervical Cancer Screening: Evaluating an Indigenous Artificial Intelligence-Enabled Portable Colposcope**<br>**Abstract:**<br><br>**Background**<br>Cervical cancer remains a leading cause of mortality for women in low-income countries. Therefore, there is an urgent need for a point-of-care cervical cancer screening test for community-based settings that can be used for triaging and managing women with preinvasive and early invasive lesions of cervix.<br><br>**Method**<br>A cross-sectional study was conducted to evaluate the diagnostic accuracy of an indigenous artificial intelligence (AI)—enabled trans-vaginal colposcopic device called Smart Scope®. Parallel screening with cervical cytology and assessment of magnified digital images was done by a trained observer to minimize false negatives. Cervical biopsy was taken for any abnormality identified on any of the three tests. Histopathology report of the biopsy was taken as the reference standard.<br><br>**Result**<br>A total of 268 women were recruited for the study. Cervical evaluation with the Smart Scope® identified 17.5% (n=47) cervices with pre-cancerous/cancerous lesions, 19.4% (n=52) with high-risk lesions, 14.2% (n=38) with inflammatory/benign lesions and 48.9% (n=131) cervices as normal. Taking cervical biopsy as the reference standard, sensitivity, specificity, PPV and NPV were 68.4%, 65.5%, 13.1%, and 96.4% respectively. In comparison, the sensitivity, specificity, PPV and NPV of cervical cytology were 43.8%, 93.3%, 46.7%, and 92.5% respectively, while that of assessment of magnified digital images by trained observer was 89.5%, 49.1%, 22.4%, and 96.6% respectively.<br><br>**Conclusion**<br>Smart Scope®-based evaluation in conjunction with the assessment of magnified digital images by a trained observer can be an effective tool for cervical cancer screening. Further improvement of AI-based |

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| | diagnosis can make it an effective tool for community-based screening. |

**Obstetrics**

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| **Khyati Bhatia**<br>**Seema Mehrotra**<br>**Vandana Solanki**<br>**Anit Parihar**<br>**Monica Agrawal**<br>**S. P. Jaiswar**<br>**Vidisha Khanna** | **Maternal ophthalmic artery Doppler peak ratio in normal pregnancy and pre-eclampsia and its association with pregnancy outcomes**<br><br>**Abstract:**<br><br>**Purpose**<br><br>Purpose of study-Pre-eclampsia is a leading cause of maternal mortality, with 12% of deaths being attributed to this condition and its complications.The neurological sequelae of pre-eclampsia are related to cerebrovascular endothelial dysfunction. Ocular circulation reflects the status of cerebral circulation as the ophthalmic artery has embryological, anatomic and functional similarities to CNS arteriolar vessels.<br><br>**Objective**<br>To evaluate the changes in ophthalmic artery Doppler parameter, Peak ratio in women with pre-eclampsia as compared to normotensive women and to examine its association with pregnancy outcome in pre eclamptic women.<br><br>**Methods**<br>This was a prospective cohort study conducted at a tertiary care center, over a period of one year involving preeclamptic and normotensive women. Opthalmic artery Doppler was performed in all recruited women. All pre-eclamptic women were followed till discharge for maternal and fetal outcomes.<br><br>**Results**<br>222 women were recruited out of which 111 were pre eclamptic and 111 were normotensive. Peak ratio cut off was calculated as 0.85 by plotting a receiver operator curve. 88.1% of pre eclamptic women with higher peak ratio i.e.>0.85 had adverse maternal outcomes whereas 51.9% pre-eclamptic women with peak ratio<0.815 had adverse outcomes.<br><br>**Conclusion**<br>Ophthalmic artery Doppler could serve as a cost effective, non invasive readily applicable and reproducible marker to predict adverse maternal outcome in pre eclamptic women, thus identifying risk for neurological complications in pre eclamptic women, thereby allowing for appropriate targeted therapy. |

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| **Prachi Suresh Rawal**<br>**S. R. Nayak** | **Role of Serum Magnesium as Predictor of Preeclampsia**<br><br>**Abstract:**<br><br>**Background**<br><br>Preeclampsia is best described as a pregnancy specific syndrome that can affect virtually every organ system. Even though a multitude of novel markers are available, serum magnesium is a cost-effective method in prediction of preedampsia. The aim of the study is to find out the relationship between serum magnesium and preeclampsia and its role in prediction of the same.<br><br>**Methods**<br>This is a comparative study done over a period of 18 months including antenatal women at 32 weeks period of gestation with 60 participants in each group with BP recording of>140/90 mmHg as cases and<140/90 mmHg as controls and serum magnesium levels were compared.<br><br>**Results**<br>Mean serum magnesium (1.82±0.26) levels were noted to be lower in preeclampsia group (p value<0.001), whereas the mean age (32.4±4.4) and BMI (29.7±1.9) in the preeclampsia group were higher than that in normotensive group.<br><br>**Conclusion**<br>This study shows that detection of serum magnesium can be cost-effective method for prediction of preeclampsia and its supplementation in pregnancy can aid in prevention as well. |
| **Khadijeh Riazi Kermani**<br>**Nazanin Abdi**<br>**Razieh Moazami Goudarzi**<br>**Zeynab Elahi**<br>**Abolhasan Divband**<br>**Shahrokh Rajaei**<br>**Mohammad Reza Kargarfard Jahromi**<br>**Fatemeh Arjmand** | **The Prevalence of Fetal Complete Heart Block and the Role of Positive Autoantibodies in Pregnant Women with Rheumatologic Diseases**<br><br>**Abstract:**<br><br>**Introduction**<br>Complete Heart Block can lead to severe fetal complications. Maternal autoantibodies cross the placenta, increasing the risk of Fetal Complete Heart Block. This study investigates the prevalence of FCHB and the role of these autoantibodies in pregnant women with rheumatologic diseases in Bandar Abbas.<br><br>**Methods**<br>This retrospective, cross-sectional study was conducted in Southern Iran between 2021 and 2023. A total of 99 pregnant women with systemic lupus erythematosus, Sjögren's syndrome, and rheumatoid arthritis, along with 4 cases of fetal bradycardia without maternal rheumatologic |

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| | history, were referred for echocardiography. Among them, 63 had positive autoantibodies. Prophylactic treatment with hydroxychloroquine and/or prednisolone was administered, and treatment with dexamethasone, IVIG, and beta sympathomimetics was initiated based on echocardiographic findings and the timing of congenital heart block diagnosis.<br><br>**Results**<br>Out of 103 cases, 7 fetuses (0.6%) were diagnosed with congenital heart block. Four women had no prior rheumatologic history, while three had a history of systemic lupus erythematosus and rheumatoid arthritis. Seven women tested positive for autoantibodies. A significant correlation was found between CHB and anti-Ro antibodies (P=0.017). Of the cases of fetal CHB, one developed hydrops fetalis, and six had CHB but normal cardiac function at birth.<br><br>**Conclusion**<br>Early diagnosis and timely intervention enhance outcomes in fetal congenital heart block, but many patients still require pacemakers, highlighting the importance of careful monitoring. Advancing risk stratification, exploring novel therapies, and conducting multicenter research are essential for optimizing management and further understanding the impact of maternal autoimmunity. |
| **Anil Eragam**<br>**Subhas Chandra Saha**<br>**Tulika Singh**<br>**Arnab Pal**<br>**Shiv Sajan Saini** | **Relationship Between Maternal Lipid Levels in Pregnancy and Major Congenital Malformations**<br><br>**Abstract:**<br><br>**Objective**<br>To compare the lipid profile of pregnant women having fetuses that carried Major Non-syndromic Congenital Malformations (MNCA) (cases) with women of normal fetuses (controls).<br><br>**Methods**<br>This was a prospective observational case–control study. The majority of the cases had fetuses with neural tube defects (64%), and the rest of the fetuses had either congenital heart disease, urogenital malformations, or musculoskeletal disorders. Lipid profiles which included total cholesterol, triglycerides (TGs), low-density lipoproteins (LDL), and high- density lipoproteins (HDL) of cases were compared with gestation-matched controls. A single fasting blood sample was analyzed in both groups and assessed for lipids.<br><br>**Results**<br>Hypotriglyceridemia, decreased cholesterol, HDL, and LDL were seen in cases in comparison with controls, Pearson's correlation coefficient (otherwise Spearman rank correlation coefficient) was applied to find out the correlation between case and controls, and it showed a statistically |

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| | significant decrease in TGs, LDL, and HDL in cases in comparison with controls.<br><br>**Conclusion**<br>Triglycerides, cholesterol, LDL, and HDL are essential for the development of the fetus in early pregnancy. Studies have proven that a decrease in these levels in mothers leads to major congenital malformations. In our study, hypolipidemia might have an association with the prevalence of MNCA. Significance It is known that lipids are essential in embryogenesis and fetal development. An abnormal lipid profile can disturb this normal mechanism and lead to major malformations. A few studies have shown this association. Our study was done to find out any association between deviant lipid profile and occurrence of major congenital malformations. |
| **Pradyumna Powalkar Neha Sancheti<br>Neelima Shah<br>Sangeeta Desai<br>Prashant Shah<br>Rakeshkumar Sharma<br>Sanket Patil** | **Role of Obstetrics Simulator in Developing Knowledge and Skills of Managing Obstetrics Emergencies in MBBS Interns**<br><br>**Abstract:**<br><br>**Background**<br>A significant proportion of maternal and perinatal fatalities are avertable through enhanced emergency obstetric and neonatal care within healthcare facilities. Simulation-based training provides a safe and error-tolerant environment for practice, thereby ensuring that real patients remain unharmed. This effectively removes the conflicting objectives of patient care and education within the clinical experiences of trainee doctors.<br><br>**Materials and Methods**<br>Emergency Obstetrics training curriculum involved CAE Lucina obstetrics simulator on which emergency obstetrics case scenarios were conducted. Evaluation of participants was done using clinical case scenarios-based questionnaire, CATS scale and case management outcomes while managing simulation-based case scenarios. Post-training the quantitative data was compared using paired t test.<br><br>**Results**<br>Total 154 participants completed this study. At the end of this study, when pre- and post-test data were compared, there was significant improvement seen in the participants performance. For questionnaire, the mean improvement in score was 2.68 points (95%CI 2.34–3.03, $p<0.05$). CATS scale showed overall Mean improvement of 25.31(95%CI 23.38–27.24, $p<0.05$). All the parameters of CATS scale showed significant improvement. Case management outcomes were improved from 63.3 to 79.59% at the end of this study. |

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| | **Conclusion**<br>This research highlights remarkable efficacy associated with the implementation of high fidelity simulation methodologies in the training concerning obstetric emergencies. The integration of a virtual reality high fidelity simulator with traditional hands-on training approaches, possesses the potential to effectively bridge the existing knowledge and skills gap. |

## CASE REPORTS

**Obstetric**

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| **Preeti F. Lewis**<br>**Mithil Rathod**<br>**Dishant Upadhyay** | **Breaking the Hesitation: Bromocriptine Use in Peripartum Cardiomyopathy with Preeclampsia—A Case Series**<br><br>**Abstract:**<br><br>**Background**<br>Peripartum cardiomyopathy (PPCM) is a rare, potentially fatal form of systolic heart failure occurring in late pregnancy or early postpartum, typically without prior structural heart disease. In India, its incidence is estimated to be 1 in 1374 live births, with maternal mortality up to 15% in resource-limited settings. When coexisting with preeclampsia, PPCM presents diagnostic and therapeutic dilemmas. Although bromocriptine is supported by trials and European Society of Cardiology (ESC) guidelines, its use in India remains limited, especially in hypertensive pregnancies due to safety concerns.<br><br>**Case Presentation**<br>We describe three antenatal patients with PPCM and severe preeclampsia managed at a tertiary referral hospital. All had moderate-to-severe left ventricular dysfunction (left ventricular ejection fraction LVEF 25–35%). One, treated without bromocriptine, had persistent dyspnoea and LVEF<45% at two weeks postpartum. Two others received bromocriptine (2.5 mg daily); one initiated early showed full recovery (LVEF 60% by day 14), while the other, started on day 8 postpartum, showed partial recovery (LVEF 50%).<br><br>**Discussion**<br>The series underscores the importance of early echocardiography in distinguishing PPCM from preeclampsia- induced pulmonary oedema. It supports the “two-hit hypothesis”, where preeclampsia acts as a second insult, triggering oxidative stress and formation of a cardiotoxic 16-kDa prolactin fragment. Bromocriptine, by inhibiting prolactin, may interrupt this pathogenesis.<br><br>**Conclusion**<br>Early recognition of PPCM in preeclamptic patients and timely |

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| | initiation of bromocriptine with standard therapy can improve cardiac recovery. Multidisciplinary management is key to addressing treatment hesitancy and improving maternal outcomes in Indian settings. |

## INSTRUMENTATION AND TECHNIQUES

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| **Atef M. Darwish**<br>**Dina A. Darwish** | **Adhesive Sterile Self-Retaining Tight External Vulvar Sheet (Adhesive Darwish Sheet) for Comfortable Vaginoscopic Surgery**<br><br>**Abstract:**<br><br>Vaginoscopic surgery is gaining popularity among hysteroscopic surgeons as a minimally invasive, effective approach to diagnosing and treating many vaginal lesions, like the excision of polyps or leiomyomata, incision of longitudinal vaginal septum, or extraction of vaginal foreign bodies. Its role is evident in nulliparous patients with a narrow vagina, virgins, or young girls. The main problem of vaginoscopy is poor or intermittent visualization due to the continuous leakage of distending media from the vulva. A previous study on 37 diagnostic or operative vaginoscopy cases utilizing a self-retaining tight external silicone vulvar (Darwish sheet) resulted in better visualization and minimal distension media leakage. |
| **Shantanu Pathak**<br>**Ahalya Kumar**<br>**Madhva Prasad** | **Comprehensive Device For Labour, Birthing And Postpartum Monitoring - A Way Forward In Maternal - Fetal Care**<br><br>**Abstract:**<br><br>**Background**<br>Despite the presence of early warning systems and scoring systems, the basic vital parameter monitoring of laboring woman can become burdensome, owing to low doctor–patient ratio and skillset gap among healthcare providers, a solution to which is to have systems which can perform simultaneous maternal and fetal monitoring.<br><br>**The Innovation**<br>The device is intelligent and AI-powered clinical decision support system for clinicians to care for mothers during the course of pregnancy. This combines the digital, wireless, and connected fetal Doppler, the tocodynamometer, a multipara monitor – (Blood pressure, heart rate, SPO2, temperature, and ECG), and an interfacing screen for clinician interactions. The unique feature of the device is that it can trigger alarm systems when any of these parameters vary beyond the limits of normal or even in correlation. |

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| | The clinician can interpret such information and make appropriate decisions. The provision of a single composite device measuring maternal and fetal monitoring is an apt technological support for optimal partogram monitoring. By giving a snapshot summary of the data points, the healthcare provider can seamlessly take informed decisions, rather than engage in time consuming data collection. Remote monitoring capability is an added advantage.<br><br>**Conclusion**<br>The device has the potential to ably assist obstetricians and midwives in their day-to-day monitoring of pregnant woman and save time and make informed decisions. |

## SHORT COMMENTARY

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| **Padmini Das**<br>**Namrata Kahlon Priyanka Sharma**<br>**A. K. Pandey**<br>**Asim Das**<br>**K. K. Deepak** | **Assessment of Transcranial Doppler (TCD)-based Cerebral Hemodynamics in Preeclamptic Women**<br><br>**Abstract:**<br><br>**Introduction**<br>Preeclampsia (PE) is a hypertensive disorder of pregnancy associated with endothelial dysfunction and neurological complications such as posterior reversible encephalopathy syndrome (PRES). Conventional laboratory tests do not adequately capture cerebral involvement. Transcranial Doppler (TCD) offers a non-invasive method to assess cerebral hemodynamics. This study aimed to characterize cerebral flow dynamics in Indian women with PE.<br><br>**Methods**<br>A cross-sectional observational study was conducted including 44 pregnant women (25 with PE, 1 z9 normotensives). PE was diagnosed using ISSHP criteria. TCD in so nation of middle, anterior, and posterior cerebral arteries was performed with a 2 MHz probe via transtemporal windows. Parameters measured were peak systolic velocity (PSV), end-diastolic velocity (EDV), cerebral perfusion pressure (CPP), and resistance-area product (RAP). Data were analyzed using SPSS v20.0 with Student's t-test and Kruskal-Wallis tests.<br><br>**Results**<br>PE participants demonstrated significantly higher systolic, diastolic, and mean arterial pressures (p 0.001). TCD revealed increased PSV in bilateral MCA, reduced EDV, and elevated CPP across MCA, ACA, and PCA compared to controls. RAP was markedly raised in the PCA, suggesting impaired autoregulation and posterior circulation vulnerability to hyperperfusion. |

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| | **Discussion**<br>The study revealed significantly elevated peak systolic velocities (PSV), raised cerebral perfusion pressures (CPP) in the middle and posterior cerebral arteries (MCA and PCA) of preeclamptics, with concurrent reductions in end-diastolic velocity (EDV). Resistance Area Product (RAP) was increased in the PCA, suggesting impaired autoregulation and increased susceptibility to hyperperfusion related injury. These hemodynamic disturbances, particularly in the posterior circulation, may serve as early indicators of PRES risk. TCD provides a feasible bedside tool for antenatal neurovascular risk stratification. Larger, multicenter studies are warranted to establish predictive thresholds for clinical use. |

## LETTER TO THE EDITOR



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| **Archana Baser**<br>**Anshu Baser** | **Exploring AI in Obstetrics and Gynaecology - Into the Unknown** |