稿件編號：OO1

臨時稿件編號：
1502

根據全國資料庫 2004-2020 年間台灣周產期產婦及胎兒結果趨勢與分析

Trends and Analysis of Peripartum and Perinatal Outcomes in Taiwan: A Nationwide Population-Based Study (2004–2020)

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義大醫院[1]

論文發表方式：
口頭報告

論文歸類：
產科

Introduction: Globally, obstetric trends have shown declining birth rates, increasing cesarean section rates, and a shift towards advanced maternal age. This study aims to analyze changes in obstetric and perinatal outcomes in Taiwan from 2004 to 2020 and explore potential factors contributing to these changes.
Methods: We conducted a retrospective cohort study using data from the Taiwan National Health Insurance claim database, maternal-children files, and birth certificate records spanning 2004–2020. Variables analyzed included maternal age, gestational age, delivery modes, perinatal risk factors, and infant birth weight . Outcomes assessed included preterm births, neonatal and maternal ICU admissions, postpartum hemorrhage, stillbirths, gestational diabetes, preeclampsia, and maternal mortality. The study also evaluated the influence of maternal obesity and living conditions.
Results: Birth rates in Taiwan declined steadily over the study period, mirroring global trends. The proportion of births to mothers of advanced maternal age increased significantly. Although the overall C-section rate rose slightly, it stabilized in recent years. However, operative vaginal deliveries showed a gradual increase. Rates of preterm birth and postpartum hemorrhage demonstrated notable increases, particularly in the advanced maternal age group. Additionally, the prevalence of gestational diabetes, hypertension, and preeclampsia rose significantly over time.
Conclusion: While the overall C-section rate in Taiwan remained relatively stable, it was higher among mothers of advanced maternal age. Operative vaginal deliveries and peripartum morbidities such as gestational diabetes, hypertension, preeclampsia, preterm labor, and postpartum hemorrhage were strongly associated with advanced maternal age, likely influenced by physiological changes and conditions like uterine fibroids or adenomyosis in older mothers. These findings underscore the need for tailored obstetric care for aging maternal populations to improve perinatal outcomes.

台灣婦產科醫學會 114 年度年會暨學術研討會

論文摘要

稿件編號：OO2

臨時稿件編號：1513

高齡產婦對妊娠結局的趨勢與影響：基於臺灣健保資料庫資料分析研究（2004–2020）

Trend and Impact of Advanced Maternal Age on Pregnancy Outcomes: A Study Analyzing Over a Decade in Taiwan (2004–2020)

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論文發表方式：口頭報告

論文歸類：產科

Introduction:

Advanced maternal age (AMA, ≥35 years) is associated with increased obstetric risks such as preterm birth, gestational diabetes, hypertensive disorders, and postpartum hemorrhage. In Taiwan, as in many high-income countries, the mean maternal age has increased over recent decades. The impact of AMA on adverse perinatal outcomes requires further study. This research aims to evaluate how AMA affects pregnancy outcomes in Taiwan, including preterm birth, neonatal birth weight, ICU admissions, delivery modes, tocolytic use, postpartum hemorrhage, intrauterine growth restriction, stillbirth, neonatal death, and maternal mortality. The study also investigates the role of urban-rural disparities.

Methods:

This retrospective cohort study utilized data from Taiwan's National Health Insurance claim dataset, maternal-children files, and birth certificate records (2004–2020). Key variables included maternal age, gestational age, perinatal risk factors, delivery modes, and socioeconomic factors. Outcomes analyzed were preterm birth rates, neonatal birth weight (<1500g, 1500–2500g, >2500g), malpresentation, tocolytic use, postpartum hemorrhage, ICU admissions, intrauterine growth restriction, stillbirth, and maternal mortality. Univariate analysis identified risk factors, while multivariate logistic regression determined predictors of adverse outcomes in AMA mothers.

Results:

AMA mothers, particularly those aged 40 and older, had significantly higher preterm birth rates, with increased risks for extremely preterm infants and low birth weights. Rates of cesarean delivery, postpartum hemorrhage, intrauterine growth restriction, fetal malpresentation, tocolytic use, and maternal ICU admissions increased with age. Postpartum mortality within seven and forty-two days was significantly associated with AMA and various risk factors.

Conclusion:

Women aged 35 and older face heightened pregnancy risks, particularly those aged 40 and above, who experience higher neonatal death rates and severe maternal complications. Interestingly, while an increasing proportion of AMA mothers, cesarean rates in Taiwan have remained stable. This may be attributed to advances in prenatal care and obstetric management, greater emphasis on the benefits of vaginal delivery, improved pre-pregnancy health awareness, and healthcare policies aimed at reducing unnecessary cesarean deliveries. However, the persistent risks of preterm birth, ICU admission, postpartum hemorrhage, and maternal mortality emphasize the need for targeted, age-specific risk management strategies.

稿件編號：OO3 臨時稿件編號：1362	妊娠期 COVID-19 疫苗接種：COVID-19 mRNA 疫苗接種後與發炎細胞因子相關的血漿 MicroRNA 的初步研究 COVID-19 Vaccination in Pregnancy: Pilot Study of Plasma MicroRNAs Associated with Inflammatory Cytokines after COVID-19 mRNA Vaccination 劉至容[1] 沈靜茹[1] 高雄醫學大學附設醫院婦產部[1]
論文發表方式：口頭報告 論文歸類：產科	Background: The impact of mRNA COVID-19 vaccines on the immunological profiles of pregnant women remains a crucial area of study. This research aims to explore the specific immunological changes triggered by these vaccines in this demographic. Methods: In a focused investigation, we examined the effects of mRNA COVID-19 vaccination on microRNA expression in pregnant women. Key microRNAs, including miR-451a, miR-23a-3p, and miR-21-5p, were analyzed for expression changes post-vaccination. Additionally, we assessed variations in S1RBD IgG levels and specific cytokines to gauge the broader immunological response. Results: Post-vaccination, significant expression shifts in the targeted microRNAs were observed. Alongside these changes, we noted alterations in S1RBD IgG and various cytokines, indicating an adapted inflammatory response. Notably, these immunological markers displayed no direct correlation with S1RBD IgG concentrations, suggesting a complex interaction between the vaccine and the immune system in pregnant women. Conclusions: Our pilot study provides valuable insights into the nuanced effects of the mRNA COVID-19 vaccine on immune dynamics in pregnant women, particularly emphasizing the role of microRNAs. The findings illuminate the intricate interplay between vaccines, microRNAs, and immune responses, enhancing our understanding of these relationships in the context of pregnancy. This research contributes significantly to the growing body of knowledge regarding mRNA COVID-19 vaccines and their specific impact on maternal immunology, offering a foundation for further studies in this vital area.

稿件編號：OO4

臨時稿件編號：
1622

評估破傷風、白喉、百日咳、流感和新冠疫苗對孕婦抗體反應影響的先導研究

Pilot Study on Evaluating the Impact of Tetanus, Diphtheria, and Pertussis (Tdap), Influenza, and COVID-19 Vaccinations on Antibody Responses in Pregnant Women

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論文發表方式：
口頭報告

論文歸類：
產科

This study assessed IgG levels to influenza/pertussis and neutralizing antibody (Nab) responses of COVID-19 vaccines in blood of pregnant women following immunization with pertussis (Tdap), influenza, and COVID-19 vaccines. We prospectively collected 71 participants categorized by the following vaccine combinations: 3TI, 4TI, 3T, and 4T groups (three and four doses of COVID-19 vaccines plus Tdap/influenza or Tdap vaccines alone). Our findings have indicated that the 3TI group exhibited elevated IgG levels for influenza B compared to the 3T group (12.90 vs. 7.75 U, p = 0.001); this pattern was not observed for influenza A. Pertussis IgG levels remained uniform across all groups. The 4TI group demonstrated a greater Nab inhibition rate from COVID-19 vaccines compared to both the 3TI and 3T groups (61.34% vs. 22.5% and 15.16%, respectively, p = 0.001). We observed no correlation between Nab inhibition rate and IgG levels for Tdap/influenza, with the exception of a moderate correlation with influenza B in the 3TI group. The efficacy of Tdap vaccine in pregnant women remained consistent, regardless of the administration of COVID-19 or influenza vaccines. Interestingly, without the influenza vaccine, both three and four doses of the COVID-19 vaccine still offered protection against influenza A, but not B. Hence, co-administering COVID-19, influenza, and Tdap vaccines during prenatal care maintains immunogenicity and is highly advised to safeguard pregnant women fully.

稿件編號：OO6

臨時稿件編號：
1444

高層次超音波在第二孕期檢測胎兒結構異常的診斷準確性

Diagnostic accuracy of second trimester detailed ultrasound in detecting the fetal structural anomalies in a single tertiary center

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高雄長庚醫院婦產部[1]

論文發表方式：
口頭報告

論文歸類：
產科

Objective
To evaluate the sensitivity, specificity, positive predictive value (PPV) and negative predictive value (NPV) in detecting fetal congenital abnormalities using mid-trimester detailed ultrasound examination.

Material and Methods
We conducted a retrospective review of electronic medical records from Kaohsiung Chang Gung Memorial Hospital between November 2019 and December 2023. The detection of prenatal structural abnormalities was performed according to ISUOG guidelines. Prenatal ultrasound findings were compared with postnatal diagnoses to calculate sensitivity, specificity, PPV and NPV.

Results
A total of 3,159 cases were included in the analysis, comprising 3,006 singleton pregnancies and 153 multiple pregnancies. In singleton pregnancies, the overall detection rate of congenital abnormalities showed a sensitivity of 27.21%, specificity of 96.69%, PPV of 28.03%, and NPV of 96.56%. For multiple pregnancies, the corresponding values were: sensitivity 33.33%, specificity 99.28%, PPV 83.33%, and NPV 93.20%. In singleton pregnancies, the sensitivity, specificity, PPV, and NPV for different anatomical regions were as follows: Head and Neck: sensitivity 20.00%, specificity 99.20%, PPV 11.11%, NPV 99.60%. Heart and Chest: sensitivity 10.26%, specificity 99.83%, PPV 28.57%, NPV 99.42%. Abdomen: sensitivity 24.07%, specificity 98.00%, PPV 18.06%, NPV 98.60%. Extremities: sensitivity 7.41%, specificity 100.00%, PPV 100.00%, NPV 99.17%. Spine and Vertebrae: sensitivity 0.00%, specificity 99.97%, PPV 0.00%, NPV 99.93%. Others (skin and umbilical cord): sensitivity 45.45%, specificity 99.97%, PPV 90.91%, NPV 99.60%. In multiple-gestation pregnancies, the sensitivity, specificity, PPV, and NPV for different anatomical regions were as follows: Head and Neck: sensitivity not applicable (NA), specificity 99.35%, PPV 0.00%, NPV 100.00%. Heart and Chest: sensitivity 10.00%, specificity 99.78%, PPV 36.36%, NPV 98.86%. Abdomen: sensitivity 25.00%, specificity 99.33%, PPV 50.00%, NPV 98.01%. Extremities: sensitivity 0.00%, specificity 100.00%, PPV NA, NPV 97.39%. Spine and Vertebrae: sensitivity NA, specificity 100.00%, PPV NA, NPV 100.00%. Others (skin and umbilical cord): sensitivity 66.67%, specificity 100.00%, PPV 100.00%, NPV 99.34%.

Conclusion:
Mid-trimester detailed ultrasound examination demonstrated high specificity in detecting fetal structural abnormalities. However, the sensitivity was lower for specific structural anomalies, highlighting the need for increased clinical vigilance in their detection.

稿件編號：OO7

臨時稿件編號：
1602

2013 年和 2023 年真空抽吸生產數量變化和新生兒出生結果:回顧性世代研究

The number change of vacuum-extraction delivery and perinatal outcomes in 2013 and 2023: a retrospective cohort study

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論文發表方式：
口頭報告

論文歸類：
產科

Objective: This study aimed to explore the number of vacuum extraction delivery (VED) in 2013 and 2023 and the associated perinatal outcomes.

Methods: This was a retrospective cohort study. The subjects included patients who delivered a child using normal spontaneous delivery (NSD) or VED in 2013 and 2023 in our hospital. We analyzed the number of VED in the two years, maternal outcomes (vaignal laceration degree and blood loss), and adverse baby outcomes. Multivariable logistic regression was performed on the entire cohort, adjusting for study covariates to assess the odds ratio (OR) of risk factors associated with VED. P values below 0.05 were considered significant.

Results: The study included 127 cases of VED (21.6%) and 461 NSD (74%). VED was more common in 2023 (61.42% vs. 38.58%, p<0.001) and associated with higher rates of severe lacerations (aOR = 2.49, 95% CI: 1.13-5.52, p=0.024), potential more blood loss (aOR = 35.96, 95% CI: -6.17-78.09, 0.094), and adverse baby outcomes (aOR = 2.97, 95% CI: 1.57-4.97, p=0.001). Key predictors of using VED include parity and fetal presentation, emphasizing the significance of these factors in maternal and neonatal outcomes.

Conclusion: The study found a significant increase in VEDs in 2023 compared to 2013, with VEDs being associated with higher risks of severe lacerations, blood loss, and adverse baby outcomes.

Keywords: vacuum extraction delivery; normal spontaneous delivery; complication; risk factors; perinatal outcomes

稿件編號：OO8

臨時稿件編號：
1418

台灣世代研究：孕期及產後母親 BMI 變化軌跡及其影響因素分析
Patterns and Predictors of Maternal BMI Trajectories During and After Pregnancy in a Taiwanese Cohort Study

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論文發表方式：
口頭報告

論文歸類：
產科

Importance: Variations in BMI can influence pregnancy outcomes, postpartum recovery, and long-term health of mothers and their offspring. At present, there is no consensus report regarding the Gestational Weight Gain (GWG) values in Asian populations.
Objective: To investigate maternal BMI trajectories from peripartum to postpartum 6 months and seeking associated factors effect BMI patterns.
Design: This birth cohort study including 502 pregnancy women using statical method to observe BMI patterns from peripartum to postpartum 6 months.
Setting: This study involved all with singleton pregnancies women aged 18-50 years old in one medical center in Taiwan.
Participants: 502 pregnancy women were initially recruited from August 2022 to August 2023. After excluding cases, 444 participants were included
Exposures: During the first prenatal check-up, consent form and questionnaires such as education level, bad habits; supplements supply and past medical history were arranged. Blood samples included serum vitamin D level and total serum immunoglobulin E were collected at gestational age of 24-28 weeks.
Main Outcomes and Measures: Using latent class trajectory modeling (LCTM) to observed maternal BMI trajectory from peripartum to postpartum 6 months and we aimed to identify distinct BMI trajectories and associated factors.
Results: Three trajectory groups included Majority-Rapid Decline (MR), High-Rapid Decline (HR) and High-Slow Decline (HS) were emerged. We found the relative risk of hypertension for HS group with an adjusted of OR of 7.63 (2.05-28.38) compared to MR group. In addition, the more the mother’s BMI from the beginning of pregnancy, the less weight loss postpartum period.
Conclusions and Relevance: Our study identified different BMI trajectory patterns during peripartum to postpartum 6 months. Understanding these trajectories was essential for developing targeted interventions to support maternal health. Proper weight gain management and personalized healthcare interventions can reduce complications for maternal and neonatal. Future research should address limitations such as regional variations and data biases to enhance the generalizability of the findings.

稿件編號：OO9

臨時稿件編號：
1542

維生素 D 代謝基因的遺傳多態性與高危險妊娠(妊娠高血壓、妊娠糖尿病及免疫疾病)的關聯性

The association of the genetic polymorphisms of vitamin D metabolizing genes and high-risk pregnancies with preeclampsia, gestational diabetes and autoimmune-diseases

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論文發表方式：
口頭報告

論文歸類：
產科

Abstract
Background:
High risk pregnancy among mothers and their babies are a major cause of maternal mortality and morbidity. In a previous study, vitamin D levels were associated with adverse pregnancy outcomes, including preeclampsia, preterm labor, and gestational diabetes. Our study aimed to investigate whether genetic polymorphisms in the vitamin D metabolism might play a role in the development of high-risk pregnancies in the presence of vitamin D.

Materials and methods:
The study involved 453 pregnant women, including 93 with High-Risk pregnancy and 360 without any diseases (Control). High-risk pregnancy included Preeclampsia, gestational diabetic and autoimmune disease. We analyzed concentrations of 25-hydroxyvitamin D3 (vitamin D) using Chemiluminescence. Gene variants of vitamin D signaling genes, such as the vitamin D receptor (rs11574010, rs1544410, rs2228570, rs731236, rs7975232), vitamin D binding protein (rs4588, rs4752, rs7041), and CYP27B1 (rs10877012), were examined using the MassARRAY™ system. Chi-square tests and logistic regression were employed to assess associations between vitamin D-related gene polymorphisms, vitamin D levels, and the potential for high-risk pregnancies.

Result:
The vitamin D levels in pregnant women at high risk were significantly higher than those in controls (28.76± 9.90 vs. 25.30± 9.65 ng/ml, p =0.0044). There was no difference in vitamin D levels between pregnant women with Gestational diabetes, preeclampsia and autoimmune diseases those without. The SNP rs10877012 (in the CYP27B1 promoter region) G-carriers (GG+GT) were more prevalent in three high pregnancy diseases (OR: 0.469, 95% CI: 0.242-0.908, p=0.0247); adjusted for age and vitamin D level).

Conclusion:
Our results revealed that the genetic polymorphism rs10877012 in CYP27B1 is associated with an increased risk of high-risk pregnancy

論文摘要

稿件編號：OO10 臨時稿件編號： 1508	子宮內輸血用於治療血紅蛋白巴特病：成功的技術和臨床經驗 Intrauterine Transfusion for Hemoglobin Bart's Disease: A Successful technique and Clinical Experiences 廖文樂[1] 中國醫藥大學附設醫院婦產部[1]
論文發表方式： 口頭報告 論文歸類： 產科	Alpha thalassemia is one of the most common genetic diseases worldwide. Haemoglobin (Hb) Bart's, a highly severe form of deletional α-thalassemia, leads to fetal hydrops and death in the third trimester. Intrauterine transfusion (IUT) is an critical and life-saving intervention for severe fetal anemia with demonstrated good outcomes. Special consideration needs to be taken into account before the procedure, such as patient selection, blood preparation, assessing the site of transfusion, blood volume. We performed IUT on two cases with homozygous alpha-thalassemia fetal hydrops, at 23 weeks and 29 weeks of gestation, respectively, both survived to birth and one was successfully transplanted with donor cord blood after birth.

稿件編號：OO11

臨時稿件編號：
1562

發生植入性胎盤新的病理機制
A novel mechanism for the pathogenesis of placenta accreta spectrum

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論文發表方式：
口頭報告

論文歸類：
產科

Objective: Abnormal trophoblast invasion and defective decidua are the hallmarks of placenta accreta spectrum (PAS); however, the mechanisms underlying this condition remain unclear. This study investigated whether the upregulation of HtrA4 expression in extravillous trophoblasts and the downregulation of HtrA1 expression in defective deciduae lead to PAS.
Methods: Tissue samples from patients undergone cesarean hysterectomy because of postpartum hemorrhage due to PAS (n=15) or uterine atony (control group; n=10) were analyzed through immunostainings. The effect of extracellular matrix (ECM) on trophoblast HtrA4 expression, and HtrA4 in the alteration of trophoblast epithelial-to-mesenchymal transition, proliferation, invasion and HtrA1 inhibition were assessed.
Results: ECM molecule collagen I, collagen IV, fibronectin, or laminin were highly expressed in decidua and myometrium. Culturing trophoblasts with these molecules induced HtrA4 expression. HtrA4 upregulated the expression of N-cadherin, vimentin, integrin beta1, snail, and matrix metalloproteinase-2 but downregulated that of zonula occludens-1. HtrA4 knockdown inhibited these effects. HtrA4 knockdown or pretreatment with recombinant HtrA1 inhibited HtrA4-induced trophoblast invasion. HtrA4 promoted trophoblast proliferation. Numerous extravillous trophoblasts exhibiting strong HtrA4 expression invaded the myometrium at the villous adherence sites affected by PAS. Relatively few extravillous trophoblasts were observed at the nonadherence sites and in the control specimens; these trophoblasts exhibited weak or no HtrA4 expression. HtrA1 was primarily expressed over the decidua.
Discussion: ECM in decidua and myometrium induced trophoblast HtrA4 expression. Decidual HtrA1 inhibited HtrA4-induced trophoblast invasion. Without the inhibition of HtrA1, HtrA4 expression and invasion was upregulated in the trophoblasts of patients with PAS. The reciprocal effects of HtrA4 and HtrA1 at the maternal-fetal interface may be involved in the pathogenesis of PAS.

稿件編號：OO12 臨時稿件編號： 1656	新創四點射頻燒灼術可以提升同卵多胞胎的減胎成功率 A novel technique with cool-tip radiofrequency ablation for selective fetal reduction in complicated monochorionic twin 吳家昀[1] 朱庭儀[1] 羅良明[1] 謝燦堂[1] 蕭勝文[1] 台北長庚婦產科[1]
論文發表方式： 口頭報告 論文歸類： 產科	Background: To invent a novel method for selective fetal reduction in monochorionic (MC) twin using cool-tip radiofrequency ablation (RFA) and analysis the perinatal outcome. Material and Methods: Complicated MC twins including twin-to twin transfusion syndrome (TTTS), selective fetal growth restriction (sFGR) and twin reverse arterial perfusion sequence (TRAP) were enrolled from 2020 to 2024. All cases were indicated for selective fetal reduction due to expected poor outcome. Equilateral triangle method using single puncture 4 times ablation with 17G cool-tip RFA to cord insertion site, umbilical vein and two umbilical arteries for complete stopping the blood flow. The power was starting from 60W, 80W, 80W and 100W one minute each site. outcome were analyzed. Results: A total of 51 cases were collected and treated in a single medical center. We divided first 20 cases as tradition group using single point ablation and novel 4-point ablation group after 21st cases. The overall co-twin survival rate after RFA procedure was 88% (45 out of 51) in whole series. However, the co-twin survival rate in the novel 4-point group was better than single point group (93.5% vs 80%) with statistically significance. The maternal age, procedure at gestational age, procedure time and preterm birth rate did not show statistically difference between two groups. Conclusions: This novel equilateral triangle method to stop all the umbilical blood flow achieved the high successful rate without maternal complication. The 17g cool-tip RFA worked at low temperature to avoid thermal damage. This might be the new choice of RFA in monochorionic pregnancies.

稿件編號：OO13

臨時稿件編號：
1584

孕婦維生素 D 濃度與高危險妊娠疾病的關聯
Association of Maternal Vitamin D Levels with High-Risk Pregnancy Complications

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論文發表方式：
口頭報告

論文歸類：
產科

In recent years, the age at first childbirth has increased year by year. The proportion of pregnant women with high-risk pregnancies is increasing year by year. Pregnant women from high-risk groups will have higher complications during pregnancy or the fetus. The National Health Service of the Ministry of Health and Welfare provided the "Peripartum High-Risk Maternity (Child) Tracking Care Plan" from 110 to 113 years and mentioned that Taiwan's current high-risk pregnancy rate is 15-20%. Preventing reproductive risks and promoting fetal health have become very important medical and social issues. In an era where public health knowledge is increasing, prevention is the best medicine to reduce various complications.

According to the results of the "National Nutrition and Health Survey" conducted by the National Health Service from 2018 to 2022, the rate of vitamin D deficiency among women of childbearing age in my country between 20 and 49 years old is 44.6%. Literature studies have shown that vitamin D can reduce pre-epileptic syndrome and gestational diabetes, but the dosages studied in the literature are higher to have a more significant difference. Therefore, we want to use this project to study the correlation between vitamin D concentrations in pregnant women suffering from high-risk pregnancy diseases and using a prospective follow-up study conducted at a central medical center to collect clinical and health data on pregnant women. The main purpose of this study is to explore the relationship between maternal vitamin D level and high-risk pregnancy diseases. High-risk pregnancies include preeclampsia, gestational diabetes, and autoimmune diseases. Through this research, we can observe the changes in various physiological values of pregnant women during childbirth and discover related factors that may cause health hazards to mothers and babies. Increased attention by clinical units to high-risk pregnancies could also benefit the implementation of health promotion policies.

Our study shows that maternal vitamin D concentrations during pregnancy have no significant impact on subsequent high-risk pregnancy disorders. These results and information can also provide important references and basis for industrial application in pregnant women with high-risk pregnancies.

台灣婦產科醫學會 114 年度年會暨學術研討會

論文摘要

稿件編號：OO14

臨時稿件編號：
1463

產後肺栓塞死亡個案之臨床特徵與風險分析

Postpartum Pulmonary Embolism: Delayed Ambulation and Maternal Risk Factors in a Nationwide Cohort

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台北馬偕醫院婦產部[1] 台灣婦女泌尿基金會[2]

論文發表方式：
口頭報告

論文歸類：
產科

Background: Pulmonary embolism (PE) is a leading cause of maternal mortality, with risk factors such as delayed postpartum ambulation, obesity, and advanced maternal age compounding the likelihood of fatal outcomes. Understanding the interplay between these factors and the rapid progression of PE is critical for improving prevention and outcomes.

Objective: To characterize the clinical features and specific risk factors associated with postpartum maternal deaths due to PE in Taiwan. The study focuses on identifying high-risk factors, including maternal age, pre-pregnancy and antepartum weight, gestational weight changes, mode of delivery, and time to ambulation. By recognizing these risk factors, the goal is to provide actionable insights to reduce the incidence and mortality of PE in postpartum women.

Methods: This retrospective cohort study analyzed 25 maternal deaths due to postpartum PE in Taiwan (2017–2023) using nationwide data from the Childbirth Accident Emergency Relief Act (CAERA). Key metrics included maternal age, parity, delivery method, pre-pregnancy and antepartum BMI, total gestational weight gain (GWG), underlying condition, postpartum and post-PE complications and time intervals related to childbirth, symptom onset, and death. Maternal-fetal medicine experts reviewed each case to distinguish PE from amniotic fluid embolism (AFE).

Results: The cohort had a mean maternal age of 35.6 years, with 92% classified as overweight or obese (mean pre-pregnancy BMI: 29.28; mean antepartum BMI: 32.34). Nearly half (48%) of the patients gained less than the ACOG-recommended gestational weight, while 28% adhered to recommendations, and 24% exceeded them. Cesarean delivery accounted for 96% of cases. The median time to first ambulation was 30.7 hours, with PE symptoms appearing at a median of 35.6 hours. A moderate correlation (R = 0.678, Confidence interval (CI) 0.386 to 0.846) was observed between delayed ambulation and symptom onset. The rapid progression from symptom onset to death (median: 22.6 hours) highlights the aggressive nature of postpartum PE.

Conclusion: This study is the first to statistically analyze postpartum time intervals—ambulation, symptom onset, and death—in relation to PE, highlighting the critical role of delayed ambulation and its alignment with the 2020 TAOG ‘Reduce obstetric pulmonary embolism (ROPE)’ recommendations. Additionally, advanced maternal age, obesity, and cesarean delivery emerged as significant contributors to postpartum PE fatalities. These findings underscore the urgent need for comprehensive prevention strategies, including early ambulation protocols, personalized weight management, and thromboprophylaxis, to reduce maternal mortality and improve postpartum outcomes

台灣婦產科醫學會 114 年度年會暨學術研討會

論文摘要

稿件編號：OO15 臨時稿件編號： 1548	骨盆環損傷後的分娩結果 Birth outcomes following pelvic ring injury: A retrospective study 許晉婕[1] 陳冰[1] 林口長庚醫院[1]
論文發表方式： 口頭報告 論文歸類： 產科	Pelvic ring injuries (PRI) are uncommon yet significant skeletal injuries that may affect future obstetric outcomes in women of childbearing age. This retrospective cohort study aimed to evaluate delivery outcomes in 41 women with prior PRI who underwent pregnancy and delivery between 2000 and 2021 at a single tertiary center. The mode of delivery, radiological outcomes, and potential influencing factors were analyzed. Of the cohort, 27 underwent cesarean section (CS) and 14 had vaginal deliveries (VD). Logistic regression identified pelvic asymmetry, as assessed by Lefaivre criteria, as a significant risk factor for CS (odds ratio 1.52; 95% CI 1.043–2.213). Retained trans-iliac sacral implants were not associated with increased CS risk. These findings indicate that VD is feasible following PRI, and pelvic asymmetry measurements may guide delivery mode decision-making. Further prospective research is needed to validate these findings and support shared decision-making between patients and clinicians.

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催生還是等待？低風險初產婦的最佳策略
To Induce or Wait: Navigating Labor Strategies in Lower Risk Nulliparous Women Beyond 39 weeks of Gestation

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Introduction: Elective induction of labor, defined as initiating labor without a medical necessity, remains a debated topic in obstetrics, especially regarding its appropriateness at 39 weeks in low-risk nulliparous women. Historically, concerns over increased cesarean section rates led to discouragement of the practice. However, the 2018 ARRIVE trial, published in The New England Journal of Medicine, indicated that elective induction at 39 weeks could reduce cesarean delivery rates. In contrast, Taiwanese studies have reported differing outcomes, possibly due to variations in patient demographics and study sizes. This underscores the importance of localized research, such as this Taiwanese ARRIVE study, to evaluate the effects of early induction versus expectant management.

Methods : We conducted a monocentric retrospective cohort study at a tertiary medical center in Taipei's Neihu district between January 2018 and May 2023. A total of 4752 patients were included, comprising 3289 cases of successful vaginal deliveries and 1462 cesarean deliveries. The study analyzed labor duration, bleeding tendencies, fetal well-being, and complications such as postpartum hemorrhage (PPH) and cesarean delivery rates. Statistical analyses were performed using Stata version 11.0 (StataCorp, College Station, TX). Chi-square and Fisher's exact tests were applied where appropriate, with a p-value < 0.05 considered statistically significant. Survival curves were generated using the Kaplan-Meier method, and the log-rank test assessed differences in survival outcomes. Cox proportional hazards modeling and multivariable analyses were performed to identify independent predictors of cesarean delivery.

Results: The study analyzed 3289 cases of vaginal delivery, with 1680 in the early induction group and 1609 in the expectant management group. The average maternal age was 32.4 years in the induction group and 33.2 years in the expectant group. The mean labor duration was 40.8 hours in the induction group versus 37.5 hours in the expectant group. Importantly, the induction group did not exhibit a significant increase in neonatal intensive care unit (NICU) admissions. However, a trend toward higher cesarean section rates was noted. Hospital stays averaged 3.36 days in the induction group and 3.28 days in the expectant group. PPH rates were 0.8% for the induction group and 0.7% for expectant management, while cesarean rates were 15.6% and 16.8%, respectively.

Conclusion: This study highlights that in low-risk pregnancies beyond 39 weeks, elective induction of labor does not significantly increase cesarean rates, postpartum hemorrhage, or NICU admissions compared to expectant management. These findings provide clarity for obstetricians in making evidence-based decisions regarding labor induction strategies, supporting its safety and feasibility in similar populations.

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妊娠糖尿病在雙胞胎懷孕之危險因子跟周產期預後

The predisposing factors and for the occurrence and the neonatal outcomes of gestational diabetes mellitus in twin pregnancies

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Background: The predisposing factors for the occurrence of gestational diabetes mellitus (GDM) have been reported as high pre-pregnancy body mass index (PBMI), advanced maternal age, or high weight gain. However, the conclusion is not solid, especially in twin pregnancy. This study aimed to evaluate the predisposing factors for the occurrence and neonatal outcomes of GDM in twin pregnancy.
Materials and methods:
This was a retrospective cohort study of twin pregnancies delivered at our hospital between April 2013 and December 2018. GDM was diagnosed by OGTT test during pregnancy. Maternal characteristics including the maternal age at delivery, gestational ages of delivery, maternal PBMI, weight gain during pregnancy, birth weight of smaller and larger twins, whether conceived by IVF and chorionicity were evaluated. Neonatal outcomes including neonatal death, gestational age of delivery, intraventricular hemorrhage (IVH), necrotizing enterocolitis (NEC), and respiratory distress syndrome (RDS) were evaluated.
Result: Totally 859 twins were included. There were 64 (7.5%) cases of GDM diagnosed during pregnancy. The maternal age of twin pregnancies with GDM was older than those without. Gestational ages of delivery, maternal PBMI, weight gain during pregnancy, and birth weight of smaller and larger twins are not significantly different between cases with and without GDM. After logistic regression analysis, only advanced maternal age is the predisposing factor for the occurrence of GDM in twin pregnancies. The neonatal natal outcomes were not significantly different between twin pregnancies with and without GDM.
Conclusion: The predisposing factor for GDM in twin pregnancy for the case series is advanced maternal age. Education of timing conception may reduce the risk of GDM in twin pregnancies.

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探討試管嬰兒、子宮內膜異位症及子宮腺肌症與重度子癲前症的相關性

Investigating the associations between in vitro fertilization, endometriosis, adenomyosis, and preeclampsia with severe features

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Objective: The associations between in vitro fertilization (IVF), endometriosis, adenomyosis, and preeclampsia have been previously discussed. This study aimed to further investigate whether these factors increase the risk of developing preeclampsia with severe features.

Methods: We conducted a retrospective cohort study involving singleton preeclamptic women who conceived via IVF treatment or were diagnosed with adenomyosis or endometrioma based on sonography or surgical pathology at a tertiary medical center between January 2016 and March 2024. The participants were divided into two groups: those with preeclampsia without severe features and those with severe features. Multivariate logistic regression analyses were performed to identify risk factors associated with preeclampsia with severe features, including advanced maternal age, nulliparity, elevated body mass index, chronic hypertension, diabetes mellitus, gestational diabetes, IVF, adenomyosis, and endometrioma.

Results: A total of 3,606 women with preeclampsia were screened, and women who conceived via IVF treatment (n = 100) or were diagnosed with adenomyosis (n = 20) or endometrioma (n = 18) through sonography or surgical pathology were enrolled. Of these, 74 women had preeclampsia without severe features, and 50 had preeclampsia with severe features. The group with preeclampsia with severe features had a higher incidence of conception via IVF (90% vs. 74.3%, p = 0.03) compared to the group with preeclampsia without severe features. However, no significant differences were observed between the two groups regarding adenomyosis or endometrioma. Additionally, the group with preeclampsia with severe features had an earlier delivery age (mean 35.0 ± 3.4 vs. 36.2 ± 2.2, p = 0.009), higher rates of non-reassuring fetal heart rates (36% vs. 14.9%, p = 0.006), and lower Apgar scores (median 8 vs. 9 at 1 minute, p < 0.001; median 9 vs. 10 at 5 minutes, p = 0.003). After adjusting for individual variables in multivariate logistic regression analysis, maternal preeclampsia with severe features was strongly associated with IVF (adjusted odds ratio 11.99, 95% confidence interval 2.18 - 65.98, p = 0.004).

Conclusion: Women who conceive via IVF are at a higher risk of developing preeclampsia with severe features during pregnancy, which may lead to adverse maternal and neonatal outcomes.