■ J-K-T Session

Shin-Yu Lin 林芯伃
(J1)

CURRICULUM VITAE

Shin-Yu Lin

Current Academic and Hospital Appointment

- Visiting staff, Department of Obstetrics and Gynecology, National Taiwan University Hospital.
- Associate professor, College of Medicine, National Taiwan University.

Education

9/1996-6/2003	M.D., College of Medicine, National Taiwan University
9/2006-6/2008	Master, Institute of Clinical Medicine, College of Medicine, National Taiwan University
9/2008-6/2014	PhD, Institute of Clinical Medicine, College of Medicine, National Taiwan University

TRAINING

7/2003-6/2007	Resident, Dept. of Obstetrics and Gynecology, National Taiwan University Hospital, Taipei, Taiwan
7/2007-6/2009	Fellow, Dept. of Medical Genetics, National Taiwan University Hospital, Taipei, Taiwan
7/2009-6/2011	Fellow, High Risk Pregnancy and Prenatal Diagnosis, Dept. of Obstetrics and Gynecology, National Taiwan University Hospital, Taipei, Taiwan

Specialty

1) Prenatal genetic diagnosis
2) Ultrasound of fetal anomaly
3) High risk pregnancy
4) DNA methylation in GDM

Changing the standardized obstetric care by expanded carrier screening and counselling: a multicenter prospective cohort study

Shin-Yu, Lin
National Taiwan University Hospital

Background: Expanded genetic screening before conception or during prenatal care can provide a more comprehensive evaluation of heritable fetal diseases. This study aimed to provide a large cohort to evaluate the significance of expanded carrier screening and to consolidate the role of expanded genetic screening in prenatal care.

Methods: This multicentre, retrospective cohort study was conducted between 31 December 2019 and 21 July 2022. A screening panel containing 302 genes and next-generation sequencing were used for the evaluation. The patients were referred from obstetric clinics, infertility centres and medical centres. Genetic counsellors conducted consultation for at least 15 min before and after screening.

Results: A total of 1587 patients were screened, and 653 pairs were identified. Among the couples who underwent the screening, 62 (9.49%) had pathogenic variants detected on the same genes. In total, 212 pathogenic genes were identified in this study. A total of 1173 participants carried at least one mutated gene, with a positive screening rate of 73.91%. Among the pathogenic variants that were screened, the gene encoding gap junction beta-2 (GJB2) exhibited the highest prevalence, amounting to 19.85%.

Conclusion: Next-generation sequencing carrier screening provided additional information that may alter prenatal obstetric care by 9.49%. Pan-ethnic genetic screening and counselling should be suggested for couples of fertile age.

■ J-K-T Session

Satoru Ikenoue
(J2)

CURRICULUM VITAE

Satoru Ikenoue, M.D., Ph.D.
Assistant Professor, Department of Obstetrics and Gynecology,
Keio University School of Medicine, Tokyo, Japan

Profession

2007	Graduated from Keio University School of Medicine, Tokyo, Japan
2007-2009	Resident, Kagoshima City Hospital, Kagoshima, Japan
2009-2013	Senior Resident, Department of Obstetrics and Gynecology, Keio University School of Medicine, Tokyo, Japan
2013-2017	Post-graduate student, Post-graduate School of Medicine, Keio University School of Medicine, Tokyo, Japan
2014-2016	Research fellow Development, health and disease research program Department of Pediatrics, University of California, Irvine
2016-2017	Department of Obstetrics and Gynecology, Keio University School of Medicine, Tokyo, Japan
2017-2018	Department of Obstetrics and Gynecology, Saitama City Hospital, Saitma, Japan
2018-2023	Department of Obstetrics and Gynecology, Keio University School of Medicine, Tokyo, Japan
2023-	Assistant Professor, Department of Obstetrics and Gynecology, Keio University School of Medicine, Tokyo, Japan

Newer insights into fetal growth and body composition

Satoru Ikenoue
Department of Obstetrics and Gynecology, Keio University School of Medicine, Tokyo, Japan

Based on epidemiological and experimental evidence, the origins of childhood obesity and early onset metabolic syndrome can be extended back to developmental processes during intrauterine life. It is necessary to actively investigate antecedent conditions that affect fetal growth by developing reliable measures to identify variations in fetal fat deposition and body composition. Recently, the resolution of ultrasonography has remarkably improved, which enables better tissue characterization and quantification of fetal fat accumulation. In addition, fetal fractional limb volume has been introduced as a novel measure to quantify fetal soft tissue volume, including fat mass and lean mass. Detecting extreme variations in fetal fat deposition may provide further insights into the origins of altered fetal body composition in pathophysiological conditions (i.e., fetal growth restriction or fetal macrosomia), which are predisposed to the metabolic syndrome in later life. Further studies are warranted to determine the maternal or placental factors that affect fetal fat deposition and body composition. Elucidating these factors may help develop clinical interventions for altered fetal growth and body composition, which could potentially lead to primary prevention of the future risk of metabolic dysfunction.

Jae Eun Shin
(J3)

CURRICULUM VITAE

Jae Eun Shin
Assistant professor,
Catholic University of Korea, Buchoen St. Mary's hospital

Education

03/1996 – 02/2000	Bechelor's degree, Korea University, College of life sciences & biotechnology
03/2000 – 02/2004	Bechelor's degree, Ewha women's university, College of medicine
08/2006 – 08/2015	Doctor's degree, Catholic university of Korea, College of medicine

Experience

03/2004 – 02/2005	Intern, Catholic University of Korea, Catholic medical center
03/2005– 02/2009	Resident, Catholic University of Korea, Catholic medical center, Department of Ob & Gy
03/2009– 02/2010	Fellowship, Catholic University of Korea, Seoul St. Mary's hospital, Department of Ob & Gy
03/2010– 02/2013	Fellowship, Catholic University of Korea, Yeouido St. Mary's hospital, Department of Ob & Gy
03/2013– 02/2023	Associate professor, Catholic University of Korea, Buchoen St. Mary's hospital, Department of Ob & Gy
03/2023- now	Assistant professor, Catholic University of Korea, Buchoen St. Mary's hospital, Department of Ob & Gy

Impact of Pre-pregnancy Fasting Glucose on Neonatal Outcomes and Early Childhood Neurodevelopment: Analysis of Non-diabetic Maternal Populations

Jae Eun Shin[1], Sung Won Han[2], Soo Bin Lee[2], Min-Jeong Oh[2], and Geum Joon Cho[3]
[1]Department of Obstetrics and Gynecology, College of Medicine, The Catholic University of Korea, Seoul, Korea
[2]School of Industrial Management Engineering, Korea University, Seoul, Korea
[3]Department of Obstetrics and Gynecology, College of Medicine, Korea University, Seoul, Korea

Background: Maternal pre-pregnancy glucose regulation plays a crucial role in pregnancy outcomes, yet the impact of fasting glucose levels within normoglycemic ranges on neonatal outcomes and neurodevelopmental outcomes remains unclear.

Methods: This population-based retrospective cohort study analyzed 114,655 deliveries between 2015 and 2016 using the Korea National Health Insurance database. Women were categorized into seven groups based on pre-pregnancy fasting glucose levels (<75, 75-79, 80-84, 85-89, 90-94, 95-100, and >100 mg/dL). We examined associations between glucose categories and birth outcomes, adjusting for maternal age, BMI, and other confounders.

Results: Higher glucose categories were associated with increased maternal age at delivery (32.73 ± 3.99 years in Category 7 vs. 31.78 ± 3.77 years in Category 1, $p < 0.001$) and cesarean delivery rates (42.23% vs. 37.37%, $p < 0.001$). Multivariate analysis showed that higher glucose categories had significantly increased adjusted odds ratios for macrosomia and large-for-gestational-age births, while showing decreased risks for low birth weight and small-for-gestational-age births compared to the lowest glucose category. No significant differences were observed between glucose categories in other neonatal outcomes or neurodevelopmental outcomes after adjustment for confounders.

Conclusions: Pre-pregnancy fasting glucose levels, even within normal ranges, significantly influence birth weight outcomes but not other neonatal or neurodevelopmental outcomes. These findings suggest the importance of optimizing pre-pregnancy glucose levels primarily for birth weight outcomes and may inform guidelines for preconception care and pregnancy monitoring.

Keywords:
Pre-pregnancy fasting glucose; Birth weight; Pregnancy outcomes; Neurodevelopment; Population cohort study

■ J-K-T Session

Isao Tamura
(J4)

CURRICULUM VITAE

Isao Tamura
Assistant Professor, Yamaguchi University Graduate School of Medicine

Education

2007-2011	Post-graduate, Department of Obstetrics and Gynecology, Yamaguchi University School of Medicine, Japan
2004	M.D., Yamaguchi University School of Medicine, Japan

Professional Training and Employment

2016-present	Assistant professor, Department of Obstetrics and Gynecology, Yamaguchi University Graduate School of Medicine
2014-2016	Research Associate, Salk Institute for Biological Studies
2011-2014	Assistant professor, Department of Obstetrics and Gynecology, Yamaguchi University Graduate School of Medicine
2007-2011	Post-graduate, Department of Obstetrics and Gynecology, Yamaguchi University School of Medicine, Japan
2006	M.D., Department of Obstetrics and Gynecology, Yamaguchi Grand Medical Center
2004-2005	Resident, Yamaguchi Grand Medical Center
2004	Graduated from Yamaguchi University School of Medicine, Japan

Awards

2024	ASRM Scientific Congress Award
2021	Japan Medical Association Encouragement Award for Medical Research
2021	JSOG Congress Encouragement Award
2021	Japan Endocrine Society Encouragement Award for Research
2021	Japan Society of Obstetrics and Gynecology Encouragement Award
2019	Japan Society of Reproductive Medicine Encouragement Award

Novel Regulatory Mechanism of Decidualization Mediated by Nuclear F-actin Formation

Isao Tamura
Assistant Professor, Yamaguchi University Graduate School of Medicine

Human endometrial stromal cells (ESCs) undergo cyclic changes during the menstrual cycle in response to changing levels of steroid hormones. Especially, ESCs morphologically and functionally change their cellular states for preparing pregnancy, referred to as decidualization. Decidualization is essential for implantation and maintenance of pregnancy. During decidualization, ESCs dramatically change their fibroblast-like morphology into the epithelial-like state with the dynamic rearrangement of cytoplasmic actin. Interestingly, this cytoskeletal actin dynamics not only morphologically, but also functionally regulate decidualization. Recent reports have suggested that actin dynamically alters its polymerized state (filamentous actin; F-actin) upon external stimuli not only in the cytoplasm, but also in the nucleus. However, nuclear actin dynamics during decidualization of human ESCs have not been elucidated. This study investigated the nuclear actin dynamics and its role in decidualization of human ESCs. For visualizing nuclear actin dynamics, ESCs expressing nuclear actin-GFP probe were established. Cells were treated with cAMP (0.5 mM) to induce decidualization. Time-lapse imaging revealed a dynamic formation of nuclear F-actin during decidualization. This was disassembled following the withdrawal of the decidualization stimulus, suggesting its reversible process. To investigate whether nuclear F-actin formation is involved in the regulation of decidualization, nuclear F-actin formation was inhibited by overexpressing the nuclear actin mutant (actinR62D). This significantly reduced the number of cells exhibiting the nuclear F-actin induced by decidualization and suppressed the expressions of decidualization markers (IGFBP-1 and PRL). Therefore, nuclear F-actin formation was essential event for decidualization. In order to investigate how the nuclear F-actin formation is involved in decidualization, we performed RNA-sequence analysis. Among the 618 genes that should be repressed in the course of decidualization, the downregulation of 304 genes was not observed when cells were overexpressed actinR62D. These genes were defined as nuclear actin-regulated genes and were related to the regulation of cell proliferation. Overexpression of actinR62D suppressed the decidualization-induced decrease in cell number. Considering that ESCs have to exit the cell cycle for accomplishing their differentiation process towards the decidualized state, nuclear F-actin formation contributes to decidualization through the suppression of cell proliferation. Furthermore, upstream analysis was performed on nuclear actin-regulated genes to identify factors regulating nuclear F-actin formation, which predicted C/EBP □ as an upstream factor. Knockdown of C/EBP □ suppressed nuclear F-actin formation, cell cycle arrest, and expression of decidualization markers, indicating that C/EBPβ induces the cell cycle arrest through the regulation of nuclear F-actin formation during decidualization. In conclusion, we revealed that actin exists in the nucleus of human ESCs and nuclear F-actin formation is induced by C/EBP □ during decidualization. This induces cell cycle arrest to differentiate into decidualized ESCs, which is a novel mechanism for the regulation of decidualization.

■ J-K-T Session

Bo Hyon Yun
(J5)

CURRICULUM VITAE

Bo Hyon Yun
Associate professor

Organization

- Division of Reproductive Endocrinology and Infertility, Department of Obstetrics and Gynecology, Yonsei University College of Medicine, Seoul, South Korea
- Department of Pediatric and Adolescent Gynecology, Severance Children' s Hospital, Yonsei University College of Medicine, Seoul, South Korea

Education

2003.3-2007.2 M.D., Yonsei University College of Medicine, Seoul, South Korea.
2011.9-2014.8 M.S., The Graduate School, Yonsei University, Seoul, South Korea.
2016.8-2019.8 PH.D. Yonsei University College of Medicine, Seoul, South Korea.

Postgraduate Training

2007.3 – 2008.2 Intern, Department of Education and Training, Severance Hospital, Yonsei University College of Medicine, Seoul, Korea
2009.3 – 2013.2 Residency, Department of Obstetrics and Gynecology, Severance Hospital, Yonsei University College of Medicine, Seoul, Korea
2013.3 – 2015.2 Fellow, Division of reproductive endocrinology and infertility, Department of Obstetrics and Gynecology, Severance Hospital, Yonsei University College of Medicine, Seoul, Korea

Position Held & Faculty Appointment

2015.3-2017.2 Clinical assistant professor, Division of Reproductive Endocrinology & Infertility, Department of Obstetrics and Gynecology, Severance Hospital, Yonsei University College of Medicine
2017.3-2022.2 Assistant professor, Division of Reproductive Endocrinology & Infertility, Department of Obstetrics and Gynecology, Severance Hospital, Yonsei University College of Medicine

2021.1-2021.12	Visiting scholar, Pediatric Adolescent Gynecology, Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD)/National Institutes of Health (NIH), Bethesda, MD USA.
2022.3- Current	Associate professor, Division of Reproductive Endocrinology & Infertility, Department of Obstetrics and Gynecology, Severance Hospital, Yonsei University College of Medicine

Specialized fields

Reproductive endocrinology & infertility, Minimally invasive surgery, Pediatric and adolescent gynecology

Research Interests

Endometriosis; oxidative stress and pathophysiology
Pediatric and Adolescent Gynecology
Fertility preservation in adolescents and young adults.

Honors & Awards

2016.9	The Best Investigator award (Good Moonhwa award-Reproductive endocrinology & infertility) – The Korean Society of Obstetrics and Gynecology.
2017.11	The Best Paper Award – The Korean Society of Menopause
2018.9, 2019.9	The Best Reviewer Award– Obstetrics and Gynecology Science
2020	KSRM- MERCK Best Reviewer Award

Membership

The North American Society for Pediatric and Adolescent Gynecology (NASPAG)-member
The European Society of Human Reproduction and Embryology – International member
The American Society for Reproductive Medicine – Member
The Korean Association of Obstetrics and Gynecology – Member
The Korean Society of Menopause – Member
The Korean Society of Gynecologic Endocrinology – Member
The Korean Society for Reproductive Medicine – Member

Common Menstrual Complaints in Pediatric and Adolescent Gynecology Clinics

Bo Hyon Yun
Associate professor, Yonsei University College of Medicine, Seoul, South Korea

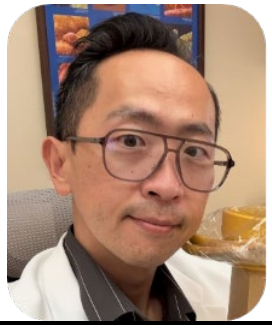
In today' s talk, we will focus on evaluating and managing common menstrual disorders in pediatric and adolescent gynecology, presenting common cases, mainly. The physiological basis of menstruation, from hormonal regulation to endometrial breakdown, is contrasted with the unique aspects of menarche and early menstrual cycles in adolescents. In adolescents, either amenorrhea or abnormal uterine bleeding is two significant parts of popularity.

Disorders like primary and secondary amenorrhea are addressed, with guidelines for initial workup, including hormonal assays, pelvic imaging, and clinical assessments. Various experiences enlighten, excluding the differential diagnoses in the complicated algorithm of the final diagnosis.

Abnormal uterine bleeding (AUB), characterized by heavy, prolonged, or frequent bleeding, is emphasized as a common adolescent issue, often stemming from the immaturity of the hypothalamic-pituitary-ovarian axis. Management goals for AUB include cessation of bleeding, anemia prevention, and restoring menstrual regularity through hormonal therapies such as combined oral contraceptives or progestins. Emphasis is placed on individualizing treatment based on the underlying etiology and patient-specific factors.

This presentation underscores the importance of timely diagnosis and treatment to ensure optimal reproductive health outcomes, including adequate sexual development, endometrial protection, and bone health. To promote awareness among adolescents and caregivers, recommendations for tracking menstrual cycles and indications for seeking medical evaluation are provided.

Chun-I Lee 李俊逸
(J6)



CURRICULUM VITAE

Chun-I Lee, M.D.

Ducation/Training

2001-2008	M.D., Medicine, National Defense Medical Center, Taiwan.

Emplоment

2021-	Assistant Professor, Department of Obstetrics and Gynecology, Chung Shan Medical University, Taiwan.
2018-	Attending Physician, Department of Obstetrics and Gynecology, Chung Shan Medical University Hospital, Taiwan.
2021-2022	Deputy Director, Reproductive Medicine Center, Chung Shan Medical University Hospital, Taiwan.
2017-2019	Director, Delivery Ward, Daqing Branch, Chung Shan Medical University Hospital, Taiwan.
2015-2017	Fellow Resident, Division of Reproductive Endocrinology and Infertility, National Taiwan University Hospital, Taiwan.
2014-2015	Attending physician, Division of Reproductive Endocrinology and Infertility, Chung-Shan Medical University Hospital, Taiwan.
2010-2014	Resident, Obstetrics and Gynecology doctor of Tri-service General Hospital, Taiwan.

Research Interests and Expertise

Reproduction,
Endocrinology,
Assisted Reproductive,
Technology Embryo Biotechnology

Novel Strategies for Optimizing Embryo Selection to Improve IVF Outcomes

Advances in embryo selection are transforming IVF by enhancing precision, efficiency, and personalization. Traditional morphological scores, based on visual assessment, have been essential for identifying viable embryos but are limited by subjectivity and an inability to predict outcomes like implantation or live births. Innovative tools like KIDScoreemploy time-lapse imaging and advanced algorithms to objectively rank embryos, reducing subjectivity and improving decision-making. Similarly, AI-powered systems such as iDAScore analyze growth trends and morphology across large datasets, enabling fully automated, non-invasive assessments with consistency and reproducibility. Personalized platforms like OPAL combine embryo-specific data with oocyte characteristics, such as shape and zona pellucida features, to predict blastocyst development with high accuracy. By utilizing machine learning and big data, OPAL optimizes outcomes for individual patients. These advanced tools integrate traditional methods with cutting-edge AI technologies, significantly improving IVF success rates while reducing emotional and financial burdens on patients. Future efforts should focus on refining predictive algorithms, expanding datasets to include diverse populations, and validating these innovations in clinical practice. Together, these advancements promise to revolutionize reproductive care and offer new hope to patients.

Yoo-Young Lee
(J7)

CURRICULUM VITAE

Yoo-Young Lee, M.D., Ph.D.
Professor
Co-Chair, Education Committee, Asian Society of Gynecologic Oncology
Principal Editor, Journal of Gynecologic Oncology
Gynecologic Oncologist, Gynecologic Cancer Center
Department of Obstetrics and Gynecology
Samsung Medical Center
Sungkyunkwan University School of Medicine Seoul, Korea
Tel: 82-2-3410-3544 Fax: 82-2-3410-0630
E-mail: yooyoung.lee@samsung.com; mheyu0a@gmail.com
ORCID: 0000-0001-5902-9877

Area of Expertise
Gynecologic Oncology
Maximal cytoreductive surgery for advanced/recurrent gynecologic cancers
Minimally invasive surgery for early gynecologic cancers
Fertility preservation treatments for young patients with gynecologic cancers
Chemotherapy and target agents

Education
2011.3 – 2013.2 Ph.D., Chung-Ang University, College of Medicine
2004.3 – 2006.8 M.S.D., Kyungpook National University, College of Medicine
1994.3 – 2000.2 M.D., Kyungpook National University, College of Medicine

Professional Training
2016.7 – 2018.2 Clinical Fellowship training, University of Toronto, Princess Margaret

■ J-K-T Session

Cancer Centre/ Sunnybrook Health Science Centre

2008.5 – 2012.2 Clinical Fellowship, Samsung Medical Center
2001.3 – 2005.2 Residency, Samsung Medical Center

Work Experience

2021.3 – present Professor, Sungkyunkwan University School of Medicine, Samsung Medical Center
2015.3 – 2021.2 Clinical Assosiate Professor, Samsung Medical Center
2012.3 – 2015.2 Clinical Assistant Professor, Samsung Medical Center

Awards and Honors

2000 The Best Intern of the Year, Samsung Medical Center, Seoul, South Korea
2008 Best Oral Presentation, Asian-Pacific Association for Gynecologic Endoscopy and Minimally Invasive Therapy
2011 The most productive scientist of the year, Good Moonhwa Award, Korean Society of Obstetrics and Gynecology
2017 Best Poster Presentation, Society of Gynecologic Oncology, Canada
2019 QI project award , Samsung Medical Center
2020 Global Leading Doctor, International Health Center, Samsung Medical Center

Yoo-Young Lee is a gynecologic oncologist at Samsung Medical Center, Seoul, Korea. His major clinical interests include surgery and enhanced recovery after surgery in gynecologic cancers, particularly in ovarian cancer. Dr. Lee' s research focuses on clinical research related to the role of maximal cytoreductive surgery for advanced/recurrent gynecologic cancers and minimally invasive surgery for early stage disease including fertility preservation treatments. Also Dr. Lee' s major interest of translational research includes investigating new treatment target for refractory gynecologic cancers using patient-derived xenografts model.

The Role of Anti-Inflammatory Modulation as a Therapeutic Strategy in Ovarian Cancer Treatment

Yoo-Young Lee, Professor,
Sungkyunkwan University School of Medicine, Samsung Medical Center

Ovarian cancer is a leading cause of death among gynecologic malignancies, characterized by late-stage diagnosis, high recurrence rates, and resistance to standard therapies. Recent research highlights the pivotal role of inflammation in ovarian tumor development, progression, and metastasis. The inflammatory tumor microenvironment (TME), enriched with cytokines, chemokines, and other inflammatory mediators, contributes to tumor proliferation, angiogenesis, and immune suppression, presenting an opportunity for therapeutic intervention.

This review examines the rationale for targeting inflammatory pathways as a novel therapeutic strategy in ovarian cancer. Anti-inflammatory agents, such as nonsteroidal anti-inflammatory drugs (NSAIDs) and COX-2 inhibitors, have shown promise in preclinical studies for reducing tumor-promoting inflammation and slowing disease progression. These agents exert their effects by suppressing key inflammatory mediators like prostaglandins, which are known to enhance tumor cell survival and invasion. Additionally, targeting components of the TME, including tumor-associated macrophages (TAMs) and other inflammatory cell subsets, offers potential for disrupting the inflammatory signaling that fuels tumor growth.

Preclinical and early-phase clinical trials have provided encouraging data on the efficacy of combining anti-inflammatory agents with conventional therapies such as chemotherapy and anti-angiogenic treatments. By reducing inflammation-driven resistance mechanisms, these combinations may enhance the therapeutic response and delay disease recurrence. Moreover, the ability of anti-inflammatory strategies to mitigate chemotherapy-induced inflammation further supports their potential to improve treatment outcomes and patient quality of life.

This review underscores the need for further research to refine the application of anti-inflammatory therapies in ovarian cancer, focusing on identifying optimal combinations and patient populations likely to benefit. By addressing the pro-tumorigenic effects of inflammation, anti-inflammatory modulation represents a promising avenue for improving survival and long-term outcomes in ovarian cancer management.

Chia-Yen Huang 黃家彥
(J8)

CURRICULUM VITAE

Chia-Yen Huang
Cathay General Hospital, Taipei, Taiwan

Professional Position

- Director, Gynecology and Gynecologic Oncology Center, Department of Women's Medicine, Cathay General Hospital, Taipei, Taiwan
- Associate Professor, School of Medicine, Fu-Jen Catholic University, New Taipei City, Taiwan
- Director, Taiwan Association of Gynecologic Oncologists (TAGO)
- Director, Taiwan Society of Cancer Registry (TSCR)

Education

2000 M.D., School of Medicine, National Taiwan University

2007 MS Graduate Institute of Clinical Medicine, National Taiwan University

2020 Ph.D., Department of Biological Science and Technology, National Chiao-Tung University

Faculty Appointments:

2022- Associate Professor, School of Medicine, Fu-Jen Catholic University, New Taipei City, Taiwan

2016- Assistant Professor, School of Medicine, Fu-Jen Catholic University, New Taipei City, Taiwan

Advancing Endometrial Cancer Care: Sentinel Lymph Node Mapping – A Single-Center Perspective

Chia-Yen Huang,
Cathay General Hospital

This presentation explores advancements in endometrial cancer care, focusing on the application and impact of sentinel lymph node (SLN) mapping. Based on insights from a single-center experience, it highlights the implementation process, clinical workflow, and the advantages of SLN mapping in accurate tumor staging and reducing surgical morbidity. The talk will present data supporting SLN mapping as a minimally invasive alternative to complete lymphadenectomy, demonstrating its potential to lower postoperative complications while maintaining high diagnostic accuracy. Challenges encountered in clinical practice, innovative solutions, and implications for future therapeutic strategies will also be discussed. This session aims to enhance the understanding of SLN mapping and encourage its broader adoption in the management of endometrial cancer.

■ J-K-T Session

Kosuke Yoshida
(J9)

CURRICULUM VITAE

Kosuke Yoshida,
Assistant Professor,
Dept. of Obstetrics and Gynecology, Nagoya University Graduate School of Medicine,
65 Tsuruma-cho, Showa-ku, Nagoya, 466-8550, Japan.
E-mail: yoshida.kosuke.n7@f.mail.nagoya-u.ac.jp

EXPERIENCE

04/2023-Present	Assistant Professor. Dept. of OBGYN, Nagoya University Graduate School of Medicine, Nagoya, Japan
10/2022-03/2023	Medical staff. Dept. of OBGYN, Chubu Rosai Hospital, Nagoya, Japan
11/2020-10/2022	Assistant Professor. Dept. of OBGYN, Nagoya University Graduate School of Medicine, Nagoya, Japan
04/2020-10/2023	Postdoctoral Researcher. Laboratory of Integrative Oncology, National Cancer Center Research Institute, Tokyo, Japan
04/2015-03/2018	Fellow. Dept. of OBGYN, Nagoya University Graduate School of Medicine, Nagoya, Japan
04/2013-03/2015	Resident. Suwa Red Cross Hospital, Nagano, Japan

EDUCATION

03/2020	Ph.D. Nagoya University Graduate School of Medicine, Nagoya, Japan
03/2023	M.D. Nagoya University, Nagoya, Japan

PERSONAL STATEMENT

I am a medical doctor and a board-certificated obstetrics and gynecology clinician by the Japan Society of Obstetrics and Gynecology. After I got a doctorate degree from Nagoya University (Nagoya Japan), I worked as a postdoctoral researcher at National Cancer Center Research Institute (Tokyo, Japan), supervised by Dr. Yusuke Yamamoto. Then, I worked as a physician-scientist at Nagoya University (assistant professor) and studied gynecologic cancers using next-generation sequencing.

HONORS

2023 Best Paper Award at Japanese Society of Obstetrics and Gynecology, Japan
2023 Research Award Nagoya Global Retreat, Nagoya University Graduate School of Medicine, Japan
2022 11th Ishida Award, Nagoya University, Japan
2022 74th JSOG Congress Encouragement Award, Japanese Society of Obstetrics and Gynecology, Japan
2019 61st JSCO Congress Award, Japan Society of Clinical Oncology, Japan
2019 71st JSOG Congress Encouragement Award, Japanese Society of Obstetrics and Gynecology, Japan

SELECTED PUBLICATIONS

1. Yokoi A, Yoshida K, et al. Spatial exosome analysis using cellulose nanofiber sheets reveals the location heterogeneity of extracellular vesicles. Nat Commun 2023;14(1):6915.
2. Yoshida K, et al. Aberrant activation of cell cycle-related kinases and the potential therapeutic impact of PLK1 or CHEK1 inhibition in uterine leiomyosarcoma. Clin Cancer Res 2022;28(10):2147– 2159.
3. Yoshida K, et al. Expression of the chrXq27.3 miRNA cluster in recurrent ovarian clear cell carcinoma and its impact on cisplatin resistance. Oncogene 2021;40(7):1225– 1268.

Elucidation of Pathophysiology in Gynecologic Cancers through Multi-Omics Analysis

Kosuke Yoshida
Dept. of Obstetrics and Gynecology, Nagoya University Graduate School of Medicine

Next-generation sequencing (NGS) has become an essential technology in molecular biological research. This presentation highlights our recent findings across four areas:

1. RNA-seq: Identification of novel therapeutic targets for uterine leiomyosarcoma (ULMS)
2. Spatial Transcriptomics: Mechanisms of PARP inhibitor resistance in high-grade serous ovarian carcinoma (HGSOC)
3. miRNA-seq: Key miRNAs in recurrent ovarian clear cell carcinoma (OCCC)
4. Extracellular Vesicle (EV) Analysis: Micro-volume ascites assessment using EV sheets

< RNA-seq: Identification of Therapeutic Targets for ULMS>

ULMS is a highly aggressive gynecologic malignancy with no established standard treatment. RNA-seq of six ULMS and three myoma samples revealed 512 differentially expressed genes and significant activation of cell cycle-related pathways in ULMS. Inhibitors targeting these pathways showed potent anti-cancer effects in vitro using leiomyosarcoma cell lines (SK-UT-1, SK-LMS-1, and SKN). In vivo, PLK1 and CHEK1 inhibitors suppressed tumor growth in SK-UT-1-bearing mice. These results suggest that cell cycle-related factors are promising therapeutic targets for ULMS.

<Spatial Transcriptomics: PARP Inhibitor Resistance in HGSOC>

PARP inhibitors, such as olaparib, are widely used in the treatment of ovarian cancer, but resistance to PARP inhibitors remains a significant clinical challenge. We performed spatial transcriptomics analysis on FFPE samples from four olaparib-sensitive and four resistant cases using 10x Genomics Visium. Gene expression profiles identified 13 clusters categorized into cancer and stromal cells. Stromal-to-cancer signaling analysis revealed midkine pathway activation in three resistant cases. In vitro studies demonstrated that midkine contributes to olaparib resistance, highlighting the pathway' s potential as a therapeutic target.

< miRNA-seq: Key miRNAs in Recurrent OCCC>

MicroRNAs (miRNAs) are small non-coding RNAs that regulate gene expression post-transcriptionally and play crucial roles in various biological processes, including cancer progression and drug resistance. We investigated miRNA profiles in recurrent OCCC through

miRNA-seq. We included ten patients with stage I OCCC who eventually experienced the recurrence, and five of them performed surgery after the recurrence. Moreover, we included ten patients with stage I OCCC without recurrence as control. miRNAs in the chrXq27.3 cluster, including miR-509-3p and miR-509-3-5p, were significantly downregulated in recurrent OCCC. Functional analyses in ES-2 cells showed that these miRNAs enhance cisplatin sensitivity by downregulating YAP1, a protein upregulated in recurrent OCCC tissues. These findings indicate that the chrXq27.3 miRNA cluster contributes to cisplatin resistance and may play a role in OCCC progression.

< EV Analysis: Micro-Volume Ascites Assessment Using EV Sheets>

EVs are membrane-bound particles secreted by cells that play a critical role in intercellular communication by transferring bioactive molecules, such as proteins, lipids, and nucleic acids, including miRNAs. Our team developed a novel EV sheet technology, which enables the efficient capture and analysis of EVs from as little as 10 μL of body fluid. The EV sheets are made from cellulose nanofibers, and this technology allows for the assessment of micro-volume ascites by attaching the organ surface. Using EV sheets, we collected samples from multiple intraperitoneal sites in seven cases. Then, EV-miRNA-seq revealed the spatial diversity of the micro-volume ascites, and especially, the liver surface exhibited distinct characteristics. In the ovarian cancer development, we found that liver surface metastasis was less frequently observed. Hence, we evaluated the roles of liver surface EV-miRNAs on the ovarian cancer progression. In vitro analyses showed that the liver-surface specific EVs inhibited ovarian cancer cell attachment, migration, and invasion in vitro. These miRNAs may serve as a barrier to ovarian cancer progression, providing a foundation for the development of novel therapeutic strategies.

In conclusion, NGS technologies have greatly advanced our understanding of gynecologic malignancies. In particular, mRNAs and miRNAs show promise as therapeutic targets and biomarkers, paving the way for novel strategies in treatment and diagnosis.