1. Perinatal Medicine

**Group leader:** Atsuo Itakura (Professor of Obstetrics)

Shintaro Makino (Associate Professor)

**Research Projects**

1) **Prediction of Preterm Birth**

Preterm birth is one of the major causes of neonatal death; thus, better diagnostics are necessary for the subsequent intensive care. However, it is still difficult to predict women who will develop preterm birth with high positive predictive value. Consequently, we have been investigating the possibility of maternal peripheral leukocytes as a marker to predict women with a risk of preterm labor using leukocyte migration assay, in collaboration with the University of Alberta, Canada.

2) **Fetal Ischemic Brain Injury**

Fetal hypoxic ischemic encephalopathy is the leading cause of cerebral palsy, although the mechanism of cerebral palsy caused by fetal ischemia has not been elucidated yet. Collaborating with a group from the University of Gothenburg, Sweden, we are attempting to reveal the mechanism of ischemic cerebral palsy.

3) **Novel Ultrasonographic Technique**

It is important to diagnose the bleeding point on the uterine wall in patients with postpartum hemorrhage and to decide how to manage and treat it. We are developing a novel ultrasonographic imaging system using contrast media with the support of Hitachi Ltd. This new technique enables visualization of uterine bleeding at the bedside, which may be a more accurate and rapid modality for identification of the focus of intractable bleeding, leading to safer management of patients. As above, to improve maternal and fetal outcome during the perinatal and peripartum period, international joint research between industry and universities is currently being conducted.

**Recent publications**


2. Gynecologic Oncology

**Group leader:** Satoru Takeda (Professor and Chief)

Yasuhisa Terao (Associate Professor)

**Research Projects**

1) The metastatic potential acquisition mechanism of endometrial cancer cells

2) Prediction of endometrial cancer lymph node metastasis

3) Treatment strategies for uterine sarcoma

4) Novel diagnosis by detection of circulating tumor cells in ovarian tumor disease

**Recent publications**


3. Reproductive Medicine
Group Leader: Keiji Kuroda (Associate Professor)
Research Projects
1) Mechanism analysis of embryo implantation and miscarriage upon decidual transformation of human endometrial stromal cells
2) Approach to treatment of unexplained recurrent implantation failure and miscarriage in fertility treatment
3) Application of oocyte activation with sperm factor, phospholipase Cζ (zeta) in fertility treatment
4) Evaluative analysis of effect of subclinical or overt hypothyroidism on ovarian reserve
5) Assessment of impact of endometriosis on ovarian function

Recent publications

4. Women’s Health & Sports Medicine
Group Leader: Mari Kitade (Associate Professor)
Research Projects
1) Management of the menstrual condition for female athletes with hormonal therapy to prevent stress fracture
2) Basic research on the role of steroid hormone for bone, muscle, and locomotive power with transgenic mice
3) The role of stromal fibroblasts in endometriosis promoting malignant change, invasion, and refractoriness
4) The efficacy of ovarian tissue vitrification as inpatient with primary ovarian insufficiency

Recent publications