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**CONFERENCE PROCEEDINGS**

**6th International Conference on Biotechnology, Bio Informatics, Bio  
Medical Sciences and Stem Cell Applications (B3SC), 21-22 Oct 2016,  
Hong Kong**

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Conference Venue

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GICB3SC1607051

### Study on Heart Rate Variability of Female with Dysmenorrhea

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#### ABSTRACT

**Purpose :** This study was performed to analyse autonomic function of dismenorrhea by Heart Rate Variability(HRV) characteristics.

**Methods :** We studied 71 patients visiting OO hospital from march, 2013 to August 2014. Among 71 patients, 53 patients were complained of dysmenorrhea and 18 patients were complained of other reasons except dysmenorrhea. We examined HRV of 71 patients and investigated the difference of HRV between two groups by student's T-test using SPSS for Windows(version 18.0).

**Results :** SDSS and RMSSD of dysmenorrhea group was significantly higher than non-dysmenorrhea group( $p=0.026$ ,  $p=0.022$ ). In LF of dysmenorrhea group was significantly higher than non-dysmenorrhea group( $p=0.039$ ). LF/HF of dysmenorrhea group was significantly lower than non-dysmenorrhea group( $p=0.018$ ).

**Conclusions :** The HRV characteristics showed that dysmenorrhea group's sympathetic nerve action to parasympathetic nerve action is rather higher than non-dymenorrhea group. From this result, we could conclude the over activation of sympathetic nerve system in dysmenorrhea patient might induce the pain symptom in the period of menstruation. The further studies on the relationship between HRV and dysmenorrhea would be needed.

**Key words :** dysmenorrhea, autonomic nervous system, heart rate variability, sympathetic nerve, parasympathetic nerve



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YRA16072051

### In silico Prediction and Evaluation of MHC-I Epitopes against the Programmed Cell Death Receptor I (PD1) and its ligand PD-L2

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#### ABSTRACT

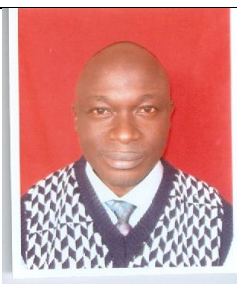
The major histocompatibility complex class I (MHC-I) are molecules expressed by dendritic cells; these are essential for the activation of CD8+ T cells (Killer T cells) as a part of the cell-mediated immunity. The Programmed cell death receptor 1 (PD1) is getting attention as novel anticancer targets, primarily due to their involvement in the T cell inhibition pathway of cancer cells. In the current study, MHC-I epitopes against PD1 and PD-L2 were predicted using prediction servers: BIMAS, nHLAPred-ComPred, HLApred, IEDB, NetTepi 1.0, PREDEP,

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	<p>ProPred-I, RANKPEP and SYFPEITHI. The top peptides predicted by each server were modelled via homology modelling using known MHC-I epitopes as templates. These predicted peptides were docked to respective MHC-I molecules and ranked using binding energies, taking note of the MHC-I and peptide residues involved in the docking. This work is a part of a continuing study to develop epitope-based vaccines, with in vitro validation of peptide immunogenicity as the next phase of the study.  <b>Keywords:</b> Major histocompatibility complex class I, Programmed cell death receptor 2, epitope prediction</p>
<p style="text-align: center;"><b>Changseok Ki</b> GICB3SC1607052</p>	<p style="text-align: center;"><b>Modulation of encapsulated macrophage behavior in three-dimensional hydrogel niches</b></p> <p style="text-align: center;"><b>Changseok Ki</b> Seoul National University, South Korea <a href="mailto:ki.cs@snu.ac.kr">ki.cs@snu.ac.kr</a></p> <p style="text-align: center;"><b>ABSTRACT</b></p> <p>Macrophages play an important role in innate and adaptive immune systems. In normal state, most of them are suspended in blood stream as well as in body fluid as monocytes. When the body is exposed to foreign organisms, materials, or other abnormal situation, they move into various types of target tissues, encountering complex microenvironment including both two-dimensional (2D) and three-dimensional (3D) circumstances. Although physiological behaviors of macrophage have been extensively explored based on common tissue culture plastics, 3D culture of macrophage has not been well studied. In this study, macrophages (RAW264.7) were encapsulated in PEG-based hydrogel, which was fabricated by thiol-ene photopolymerization. Various cell behaviors (e.g., proliferation, cluster formation, inflammatory cytokine expression) of macrophages in 3D matrix were explored by manipulating the hydrogel compositions and properties (e.g., crosslinker types, densities, stiffness, bioactive molecules). As a result, hydrogel stiffness, degradability, and protease sensitivity influenced macrophage proliferation as well as activity. These findings indicated that macrophages in 3D microenvironment act differently compared with 2D culture system, implying that they would show different immune activity in different types of tissues.</p>
<p style="text-align: center;"><b>Sze Kin Yan</b> GIC116072051</p>	<p style="text-align: center;"><b>Mother's feeding infant formula milk experiences</b></p> <p style="text-align: center;"><b>Sze Kin Yan</b> Hospital Authority, Hong Kong <a href="mailto:kinyans@yahoo.com.hk">kinyans@yahoo.com.hk</a></p> <p style="text-align: center;"><b>ABSTRACT</b></p> <p>After a series of incidents pertaining to infant formula safety, such as the 2008 melamine contamination in China, Chinese parents pay more attention to food safety. Foreign formula milk are highly sought by Chinese parents. The local Hong Kong parents complain the Chinese parents purchase all formula milk. However, infant formula is widely consumed across Hong Kong. Although women who formula feed their babies have been extensively studied, most of these studies have focused on the reasons of shaped mothers' decision to formula feed and minimize the breastfeeding practice. There has been relatively little scholarly interest in the experiences that mothers consider in their choice of formula.</p>

Moreover, there is a knowledge gap in deeper understanding for the widespread popularity of formula milk using in Hong Kong. Prior to this study, very little contemporary research has been conducted on the infant feeding practices of Chinese populations. This study employs a phenomenological method to investigate Hong Kong women's experience of formula feeding. Sixteen women aged 18 and above were purposively sampled for unstructured interviews of about half to one hour. Verbatim transcripts were then analyzed using the qualitative methodology of Interpretative Phenomenological Analysis (IPA). The findings of women's formula feeding experiences were explicated which revealed their common concerns and shared meanings. The findings of this study revealed a number of pertinent areas which needed to be considered when preparing infant feeding campaign.



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**Exploring Family-Centred Care for Children Living with HIV and AIDS in Nigeria**

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**ABSTRACT**

Family-centred care can be the bedrock of integrated care for children living with HIV and AIDS in providing services that can enhance health outcomes and in coping with the consequences of HIV. The purpose of the study was to explore the role of family-centred care in supporting children living with HIV and AIDS in Nigeria. A qualitative research design was adopted with a grounded theory approach. Children living with HIV and AIDS, caregivers, and nurse practitioners working in HIV clinic participated in this study with focus group discussions. The findings showed that the value African families place on children plays a significant role in identifying their care needs and providing their basic necessities; hence, people around the sick child tend to make him feel better, as attested by nurse practitioners and caregiver participants. Nurse practitioner participants cited unified families as providing care support and love to the children and the support needed to alleviate their sicknesses. Children participants confirmed that family members/relatives were always at their disposal to provide supportive care in terms of administering antiretroviral medication and providing psychological care; although a few participants indicated that disruption in family structures in resource-poor settings, isolation and withdrawal, and deprivation of care due to poverty threatened the care rendered to the children. The study highlighted the value attached to children in the African context as helping family members to identify the care needs of children living with HIV and AIDS; thereby providing succour to alleviate their sicknesses and enhance their quality of life.

 <p><b>Mohammad Jamal Khan</b> GICI16072052</p>	<p><b>Travel Decision Making of International Patients – Conceptualization of Destination Image</b></p> <p><b>Mohammad Jamal Khan</b> Department of International Business, School of Management, Universiti Sains Malaysia, Malaysia <a href="mailto:jamal.phd.usm@gmail.com">jamal.phd.usm@gmail.com</a> <a href="mailto:khandrjamal@gmail.com">khandrjamal@gmail.com</a></p> <p><b>ABSTRACT</b></p> <p>International medical travel is a phenomenon growing rapidly in different parts of the world and various countries mainly in developing regions have been emerged as preferred destinations of international medical travelers. However, literature is still in short of explaining decision making of international patients in context of destination image. Every destination has projected its image which attracts international patients and this image is developed with combination of different factors responsible for its formation. Literature in leisure travel discussed about factors responsible for image formation are, destination attributes, destination risks and destination benefits. After extensive review of international medical travel literature it was found that international medical travelers evaluate medical travel destinations on various aspects such as medical as well as non-medical services offered at a destination, personal-physical safety as well as quality of services offered, and competitiveness of a destination in comparison to other destinations. Medical and non-medical services at destination can be considered as destination attributes, whereas, personal-physical safety and concerns for quality of services can be considered as destination risks. Competitiveness of a destination which is measured on consumption values of product/service offered can be judges as destination benefits. Researchers argue that combined evaluation of attributes, risks and benefits lead to travelers to form an image of destination in their minds which facilitate in development of travel intention. This study proposes a conceptual model which helps in development of understanding regarding travel decision making of international patients in context of destination image formation.</p> <p><b>Keywords:</b> Medical and non-medical attributes, destination benefits, destination risks, medical travel destination image, travel intention</p>
<p><b>Verna Zafra</b> GICHNDM1607053</p>	<p><b>The Perceptions of University of Guam Students Towards Males in the Nursing Profession</b></p> <p><b>Verna Zafra</b> Division of English and Applied Linguistics, University of Guam, Guam <a href="mailto:verna_zafra@yahoo.com">verna_zafra@yahoo.com</a></p> <p><b>ABSTRACT</b></p> <p>For as long as nursing has been acknowledged as a profession, it has been dominated by females. Since the time of antiquity, several different civilizations designated the role of the nurse to women. Women continued to fill this role as societies evolved and modernized, and with the improvements made in the 1800s by the famous social reformer Florence Nightingale, nursing was solidified as a professional occupation (Egenes 2-6). Today, nursing remains an ever-growing profession, but the number of female to male nurses is largely disproportionate.</p>

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	<p>Despite the fact that “between 2003 and 2011, the percentage of male RNs increased from 9.5% to 12.2%,” males still remain the minority (Scrubs). A possible reason for why men are so underrepresented in comparison to women is because nursing is often considered to be a feminine profession.</p>
<p><b>Geoffrey I. Nwaka</b> <b>GICHNDM1607056</b></p>	<p style="text-align: center;"><b>The Poor and their Health and Well-being in Nigerian Cities</b></p> <p style="text-align: center;"><b>Geoffrey I. Nwaka</b> <b>Abia State University, Uturu, Nigeria</b></p> <p style="text-align: center;"><b>ABSTRACT</b></p> <p><b>Ideally, well managed cities should promote good health and well-being; but poverty and slum conditions pose a serious public health challenge to Nigeria’s rapidly expanding urban population, especially women and children who are very much at risk. UN-Habitat estimates that sub-Saharan African cities have over 166 million slum dwellers. Some elite neighborhoods enjoy relatively high quality housing and residential environment, but the bulk of the urban poor live in appalling and health-threatening conditions, with inadequate water supply and sanitation. Nutritional standards are low, and food contamination is common, especially in the extensive street foods industry. Indoor pollution from open fires and stoves in poorly ventilated homes is known to be responsible for a wide variety of respiratory ailments among women and children who are exposed constantly to toxic fumes in cooking areas. The poor are also more vulnerable to increasing crime and violence in the cities, as well as to the adverse health effects of climate change. They have little or no social protection, and rely largely on their own means and on traditional kin-based arrangements and other informal social security networks. Some states are ahead of others in providing free or affordable access to health, educational and nutritional services, but the country has been slow in developing and adopting a national social protection policy that would prioritize and cater to the needs and rights of children and other vulnerable groups.</b></p> <p><b>Unfortunately, the current pattern of government spending on the health and the social sector tends to favor the better-off in society. Indeed many government officials and planners still see the urban poor and the slums in which they live as evidence of the failure of official policy, and therefore something to be removed through misguided policies of forced eviction and other forms of repression. As we now adopt the post-2015 Sustainable Development Goals, the main policy challenge is how best to reach the poor, and decrease the inequalities in access to health care and other social services; how to promote the growth of more inclusive and humane cities by reviewing discriminatory laws and codes which inhibit the access of the poor to affordable land, healthcare and housing security; how to reduce poverty, promote decent work and access to micro-credit and other forms of financial and business services for townspeople since the fate of children is inextricably linked to the fortunes of their poor parents and guardians. Current research suggest that the path to urban peace, health and sustainability in Africa lies in building more inclusive and socially equitable cities The concluding section stress the need for appropriate and well targeted urban health and other social interventions by state and local authorities, the international development community, the private and civil society organizations and the urban poor themselves in a collaborative effort to build safer, healthier, more child friendly</b></p>


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	<p>and equitable cities. Keywords: urban poor, environmental health, inequality, social protection, Nigeria</p>
<p>SoghraNikpour GICHNDM1607060</p>	<p style="text-align: center;"><b>Effect of Empowering through Group Discussion on Empowerment of Patients with Hypertension in who Referred to Health Centers</b></p> <p style="text-align: center;">SoghraNikpour Center for Nursing Care Research, School of Nursing and Midwifery, Iran University of Medical Sciences and Health Services, Iran <a href="mailto:nikiniki_s@yahoo.com">nikiniki_s@yahoo.com</a> <a href="mailto:soghra.nikpour@gmail.com">soghra.nikpour@gmail.com</a></p> <p style="text-align: center;"><b>ABSTRACT</b></p> <p><b>Background &amp; Objective:</b> Control of hypertension is based on lifestyle modification. Group discussion can be considered as an efficient method for health education. Therefore, this study was aimed to determine the effect of group discussion on the empowerment of patients with hypertension who were referred to two health centers in Tehran.</p> <p><b>Method:</b> This was a pretest-post test, quasi-experimental study in a group. The convenience sampling method was used by randomly selecting 36 patients with primary hypertension, aged 30-65 years. They were divided into 4 groups of 9 people. Since the comparison of groups was not taken into consideration, they were not homogenized. For each group, six 90-minute group discussion sessions were held. The tools included demographic information checklists and verbal empowerment questionnaire of Elhani et al with the scale of perceived intensity, perceived susceptibility, efficacy, and control axis. The data were calculated and analyzed using descriptive statistics and paired t-test.</p> <p><b>Results:</b> The average age of the subjects was <math>54 \pm 8.4</math> years and 34.4% of the participants had a history of hypertension for 5 years. Group discussions could lead to improve the average empowerment of individuals (P=0.04). Furthermore, among all the aspects of empowerment, group discussions had the greatest impact on the perception and sensitivity levels (P=0.001 and P=0.02 respectively).</p> <p><b>Conclusion:</b> In patients with hypertension, group discussions can lead to increased perception and sensitivity levels and also enhance the ability of individuals to control their lifestyles.</p> <p><b>Keywords:</b> Empowerment, Hypertension, Group Discussion</p>
<p>MarhamatFarahaniniaNia GICHNDM1607061</p>	<p style="text-align: center;"><b>Factors Associated with Quality of Life in People with Lower Limb Amputations</b></p> <p style="text-align: center;">MarhamatFarahaniniaNia Depatment of Community Health Nursing , Iran University of Medical Sciences and Health Services <a href="mailto:farahaninia.m@iums.ac.ir">farahaninia.m@iums.ac.ir</a></p> <p style="text-align: center;"><b>ABSTRACT</b></p> <p><b>Background &amp; Objective:</b> Amputation of a body part is a "life-changing event". Amputation affects almost all aspects of an individual's life. Many issues arise following the loss of all or part of a person's limb(s). Disability as a consequence of amputation has a devastating effect on the quality of life of the disabled people. The aim of this study was to investigate the factors associated with quality of life in people with lower limb amputations</p>

	<p><b>Material &amp; Methods:</b> It was a descriptive, cross-sectional study. The study population consisted of all above 18 years referred to the rehabilitation center of Tehran who had lost part or their entire lower limb due to disease or accident. Data was collected by the Short Form 36 Item Health Survey Questioner (SF36), and a Demographic information sheet, and analyzed using SPSS-PC (V.12).</p> <p><b>Results:</b> The score of the quality of life of most study sample (%59/2) was 34-46. The mean and standard deviation of total quality of life was 55.02±17.226. there were a significant relationship between the quality of life and the sample's age, marital status, number of children, education, job status (before and after amputation), financial status, residence, the status of residence, type of insurance, type of home, the amputated limb, the level of amputation, the time after amputation, using prosthesis, use of assistive devices, and the reason for amputation (<math>P &gt; 0/05</math>). The regression analysis revealed that the factors associated with quality of life in order of importance were using prosthesis, financial status, the reason for amputation, and the number of children.</p> <p><b>Conclusions:</b> Identification of these factors for consultation, planning and implementing appropriate health policies to improve quality of life of these individuals is recommended.</p> <p><b>Keywords:</b> Amputation, Quality of Life, Associated Factors</p>
 <p><b>Wafika A. Suliman</b> GICHNDM1607055</p>	<p><b>Roles and Responsibilities of Nurse Preceptors: Perception of Preceptors and Preceptees</b></p> <p><b>Wafika A. Suliman</b> College of Nursing, Jeddah, King Saud Bin Abdulaziz University for Health Sciences, Saudi Arabia <a href="mailto:thaherw@ngha.med.sa">thaherw@ngha.med.sa</a></p> <p><b>ABSTRACT</b></p> <p>In this study setting, preceptors, who were clinical teaching assistants and hospital employed nurses assist through an interactive process preceptees, who were nursing students, in developing clinical skills and integration into the culture of the clinical area. Therefore, roles and responsibilities of preceptors should be clear and meet the expectations of preceptors and preceptees. This study aimed at comparing similarities and differences of perception to roles and responsibilities" as held by nurse preceptors and their preceptees in relation to how important such roles and responsibilities are, and how frequently preceptors attend to the role. A self-administered questionnaire using Boyer's (2008) roles and responsibilities was completed by a convenience sample of 87 preceptee and 62 preceptors amounting to 66.9% and 77.5% response rate respectively. The questionnaire included 43 items and two 4-points Likert-type scales: "Importance of", and "frequency of attendance to roles". Two versions were developed: one for preceptors and the other for preceptees. The reliability (Alpha values) was .944 for the importance and .973 for the frequency of attendance scales. Mean scores indicated agreement among the two groups in relation to importance of,</p>



	<p>but to disagreement in relation to frequency of attendance to certain roles and responsibilities. Both groups perceived roles and responsibilities as important but varied with significant difference in rating preceptors' frequency of attendance to their roles as educators and facilitators. <b>Keywords:</b> Preceptors; Preceptees; Roles; Responsibilities.</p>
 <p><b>PrasertPrasomruk</b> GIC16072051</p>	<p>The Innovation of colored flags, the media of love for diabetes mellitus awareness at Tambon Hong sang health promotion hospital, LoengNokTha district, Yasothon Province, Thailand</p> <p><b>PrasertPrasomruk</b> Faculty Of Medicine, KhonkeanUniversity <a href="mailto:ps.tongmark@gmail.com">ps.tongmark@gmail.com</a></p> <p><b>ABSTRACT</b></p> <p>The numbers of diabetic patients have increased as well as their problem for blood sugar control, resulting in many complications, especially those elderly patients. This study aimed to investigate the effect of the colored flags of love model on diabetic patients' awareness. A total of 11 elderly patients, at the Hong sang health promotion hospital, whose fasting blood sugar (FBS) level higher than 126 mg/dl were recruited. These participants were: 1) followed up every three months at the chronic disease club; 2) provided education about diabetes mellitus and how to self-managed; 3) visited at their home by health volunteers and healthcare personnel (frequency of home visits were based on colored of the flag); and 4) communicated to be aware for their blood sugar levels through the "colored flags. The red, orange, yellow and green flag were used for FBS &gt; 183, 155-182, 126-154, and &lt;125, respectively. Data were gathered using questionnaires for diabetes mellitus control behavior (Cronbach alpha = 0.93), a satisfaction rating (Confidence value = 0.97) and data from the medical records. Data was analyzed using descriptive statistics.</p> <p>This study found that the majority of participating patients were females (9 cases) and couples (7 cases). The mean age was 75.73 years (SD = 4.00), unemployed 10 cases and the mean income was 3,954.55 baht per month (SD = 1,603.97). In all, 6 cases had vision problems and 8 cases had hearing problems. General health status from self-assessment was moderate (6 cases).</p> <p>After enrolment in "the colored flags of love model for diabetic patients' awareness" program, 11 patients were found that their blood sugar levels were in the red flag for three months. After one, two and three months, the number of the patients whose blood sugar was in controlled were 8, 9 and 10 patients, respectively. The optimal way to make diabetic patients understood the complications of diabetes mellitus were communication, between patients and staff. Due to these methods, diabetic patients can understand the complications of diabetes mellitus, perceived their health status and self-care correctly.</p> <p><b>Keywords:</b> Diabetes mellitus patients, colored flags.</p>



**Yeon-Kyoung Pak**  
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**STUDY ON HEART RATE VARIABILITY(HRV) OF FEMALE WITH  
DYSMENORRHEA**

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**Jin-Moo Lee**

**ABSTRACT**

**Purpose:** This study was performed to analyze autonomic function of  
dysmenorrhea by Heart Rate Variability(HRV) characteristics.

**Methods:** We studied 71 patients visiting OO hospital from march, 2013 to  
August 2014. Among 71 patients, 53 patients were complained of dysmenorrhea  
and 18 patients were complained of other reasons except dysmenorrhea. We  
examined HRV of 71 patients and investigated the difference of HRV between two  
groups by student's T-test using SPSS for Windows(version 18.0).

**Results :** SDSS and RMSSD of dysmenorrhea group was significantly higher than  
non-dysmenorrhea group( $p=0.026$ ,  $p=0.022$ ). In LF of dysmenorrhea group was  
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group( $p=0.018$ ).

**Conclusions:** The HRV characteristics showed that dysmenorrhea group's  
sympathetic nerve action to parasympathetic nerve action is rather higher than  
non-dysmenorrhea group. From this result, we could conclude the over activation  
of sympathetic nerve system in dysmenorrhea patient might induce the pain  
symptom in the period of menstruation. The further studies on the relationship  
between HRV and dysmenorrhea would be needed.

**Key words :** Dysmenorrhea, autonomic nervous system, heart rate variability,  
sympathetic nerve, parasympathetic nerve



**Rouyi Lin**  
GICB3SC1607052

**Correlation of A Volumetric Descriptor on Breast Magnetic Resonance Imaging  
with Recurrence Risk**

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	<p style="text-align: center;"><b>ABSTRACT</b></p> <p><b>Purpose:</b> The purpose of this study was to determine whether there is a statistically significant correlation between the recurrence risk calculated by immune histochemical score (IHC score was identified using the following biomarkers: Estrogen receptor (ER), Progesterone receptor (PR), HER2, Ki-67) and the kinetic characteristics volume ratio (KCV ratio) on breast MRI.</p> <p><b>Materials and Methods:</b> Breast MRI examinations and histopathology of 167 surgically treated breast cancer patients were retrospectively reviewed. Ductal carcinoma in situ (DCIS) and invasive ductal carcinoma (IDC) of the histopathology type accounted for about 44 and 123 respectively. These patients met the criteria: positive core needle biopsy, adjuvant therapy, and the examination biomarkers. The KCV ratio for each kinetic enhancement type was calculated as the ratio of the number of voxels belonging to the type to the total number of lesion voxels. Analysis of variance was used to compare the KCV ratios among the three kinetic enhancement types for each molecular subtype biomarkers.</p> <p><b>Results:</b> In the low IHC4 score (low recurrence risk) group, the post hoc test showed the significant difference between the KCV ratio from the plateau pattern and those from washout and persistent patterns in this study. There was a significant difference between the KCV ratios of plateau enhancement and persistent types in high recurrence risk group with high tumor heterogeneity.</p> <p><b>Conclusion:</b> This study has provided a volumetric descriptor, KCV ratio, to determine the relationship between the KCV ratio in the breast MRI and immunohistochemical biomarkers.</p> <p><b>Key word:</b> Breast MRI, immunohistochemical score, recurrence risk</p>
 <p style="text-align: center;"><b>Ju Ouyang</b> GICB3SC1607053</p>	<p style="text-align: center;"><b>Differential analysis of the 4D gradient-based feature between ductal carcinoma in situ and invasive ductal carcinoma</b></p> <p style="text-align: center;"><b>Ju Ouyang</b> Tzu Chi University Department of Medical Informatics, Taiwan juouyang@gmail.com</p> <p style="text-align: center;"><b>Rou-Yi Lin</b> Tzu Chi University Department of Medical Informatics, Taiwan linrouyi@gmail.com,</p> <p style="text-align: center;"><b>Pai-Jung Huang</b> Graduate Institute of Biomedical Informatics, Taipei Medical University, Taiwan pj9066@gmail.com</p> <p style="text-align: center;"><b>Hsi-Jian Lee</b> Tzu Chi University Institute of Medical Sciences, Taiwan hjlee@gms.tcu.edu.tw</p> <p style="text-align: center;"><b>ABSTRACT</b></p> <p><b>Purpose:</b> The purpose of this study is to determine the capability of modern gradient-based image phenotypes to distinguish between ductal carcinoma in situ (DCIS) and invasive ductal carcinoma (IDC).</p> <p><b>Method and Material:</b> In this Institutional Review Board-approved retrospective</p>

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<p>study, 230 biopsy-proven breast lesions from 210 patients who received totally 222 DCE-MRI were analyzed. The breast lesions contained 63 benign, 44 ductal carcinoma in situ, and 123 invasive ductal carcinoma. Each lesion was segmented semi-automatically by an adaptive region growing method, where the initial seed points were selected manually and the similarity value was based on their kinetic enhancement. For each voxel on breast MRI, a set of image phenotypes were extracted: gradient-based phenotype including 432 features were obtained using 4D histogram of oriented gradients. A subset of the gradient-based features was selected using an efficient sequential forward floating search algorithm. To distinguish between malignant cancers (DCIS and IDC) and benign, predictive models were built based on support vector machines. Result: The models were evaluated in a leave-one-out, cross-validation analysis with the area under the receiver operating characteristic curve (AUC) as the figure of merit. The gradient-based image phenotypes, differentiation of DCIS from IDC lesions yielded an AUC of 0.92. AUCs were 0.86 for differentiation between IDC and benign lesions and 0.89 for differentiation between DCIS and benign lesions.</p> <p>Conclusion: Using 4D gradient-based features provides the potentially useful and robust image phenotypes in the discrimination of breast cancers.</p>
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## Listeners

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**6th International Conference on Biotechnology, Bio Informatics, Bio Medical Sciences and Stem Cell Applications (B3SC), 21-22 Oct 2016, Hong Kong**  
Regal Oriental Hotel, 30-38 Sa Po Road, Kowloon City, Hong Kong

## **Upcoming Conferences**

<http://iaphlsr.org/conference.php>

- » 6th International Conference on Biotechnology, Bio Informatics, Bio Medical Sciences and Stem Cell Applications (B3SC), 21-22 Oct 2016, Hong Kong
- » 6th International Conference on Healthcare, Nursing and Disease Management (HNDM), 21-22 Oct 2016, Hong Kong
- » 7th International Conference on Biotechnology, Bio Informatics, Bio Medical Sciences and Stem Cell Applications (B3SC), 11-12 Nov 2016, Singapore
- » 7th International Conference on Healthcare, Nursing and Disease Management (HNDM), 11-12 Nov 2016, Singapore
- » 8th International Conference on Biotechnology, Bio Informatics, Bio Medical Sciences and Stem Cell Applications (B3SC), 21-22 Dec 2016, Dubai
- » 8th International Conference on Healthcare, Nursing and Disease Management (HNDM), 21-22 Dec 2016, Dubai
- » 9th International Conference on Biotechnology, Bio Informatics, Bio Medical Sciences and Stem Cell Applications (B3SC), 30-31 Dec, 2016 Bangkok, Thailand
- » 9th International Conference on Healthcare, Nursing and Disease Management (HNDM), 30-31 Dec 2016, Bangkok, Thailand
- » 10th International Conference on Biotechnology, Bio Informatics, Bio Medical Sciences and Stem Cell Applications (B3SC), 22-23 Feb 2017, Dubai
- » 10th International Conference on Healthcare, Nursing and Disease Management (HNDM), 22-23 Feb 2017, Dubai
- » 12th International Conference on Biotechnology, Bio Informatics, Bio Medical Sciences and Stem Cell Applications (B3SC), 09-10 Dec 2016, Kuala Lumpur

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- » 12th International Conference on Healthcare, Nursing and Disease Management (HNDM), 09-10 Dec 2016, Kuala Lumpur
- » 13th International Conference on Healthcare and Life Science Research (ICHLSR), 26-27 May 2017, Lisbon
- » 13th International Conference on Nursing and Midwifery (ICNM), 26-27 May 2017, Lisbon
- » 14th International Conference on Healthcare and Life Science Research (ICHLSR), 17-18 June 2017, Singapore
- » 14th International Conference on Nursing and Midwifery (ICNM), 17-18 June 2017, Singapore
- » 15th International Conference on Healthcare & Life-Science Research (ICHLSR), 24-25 June 2017, Kuala Lumpur, Malaysia
- » 15th International Conference on Nursing & Midwifery (ICNM), 24-25 June 2017, Kuala Lumpur, Malaysia
- » 16th International Conference on Healthcare & Life-Science Research (ICHLSR), 15-16 July 2017, Bali, Indonesia
- » 16th International Conference on Nursing & Midwifery (ICNM), 15-16 July 2017, Bali, Indonesia
- » 17th International Conference on Healthcare & Life-Science Research (ICHLSR), 22-23 July 2017, Bangkok, Thailand
- » 17th International Conference on Nursing & Midwifery (ICNM), 22-23 July 2017, Bangkok, Thailand
- » 18th International Conference on Healthcare & Life-Science Research (ICHLSR), 10-11 June 2017, Rome, Italy

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