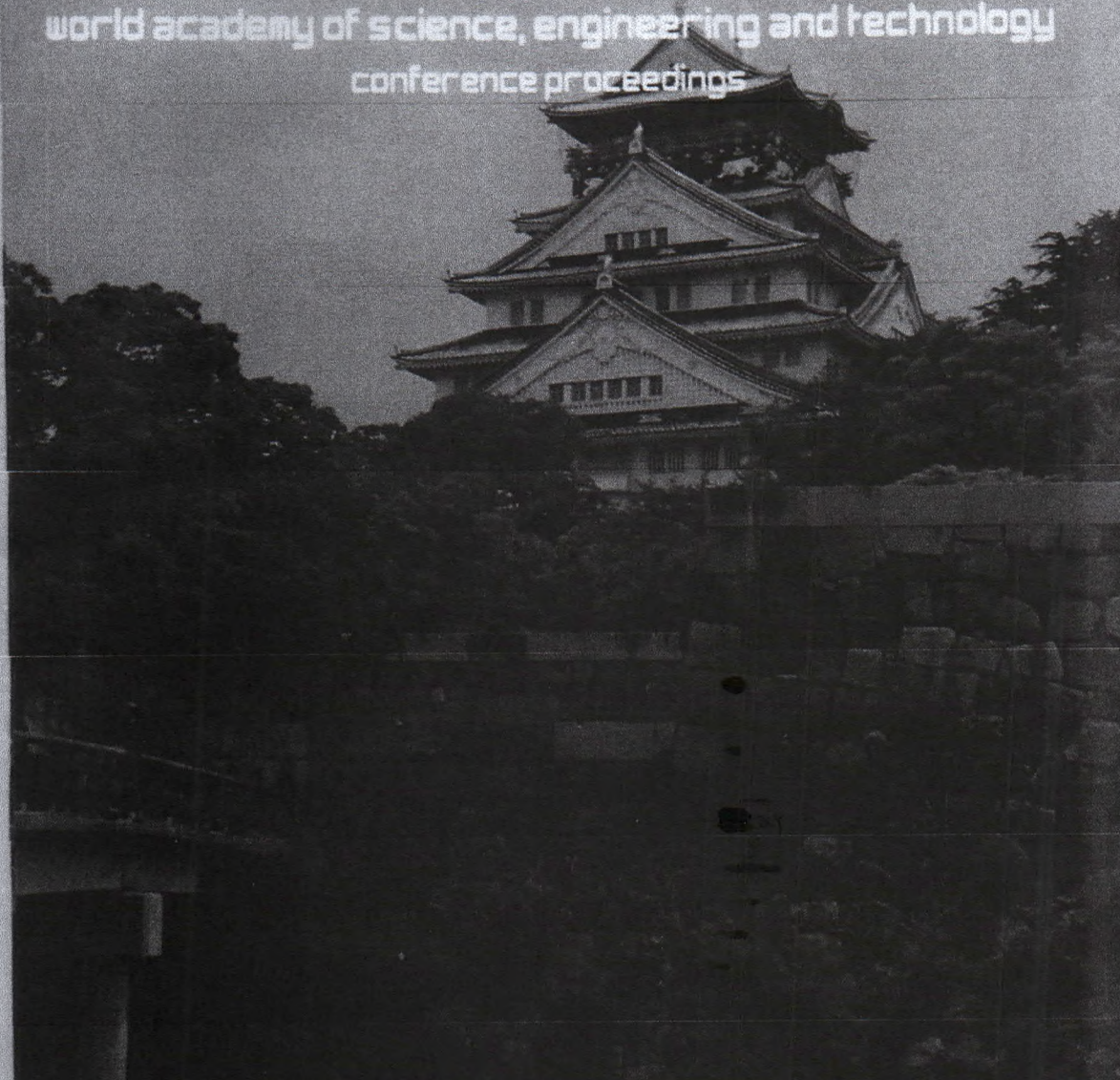




ISSN: 2010-3778
PISSN: 2010-3784

19.

world academy of science, engineering and technology
conference proceedings



march 30-31, 2017 osaka japan

international scholarly and scientific research & innovation
waset.org

Prof. DR. Dr Eryati Darwin,PA(K)
JL. Veteran 13A Padang

WORLD ACADEMY OF SCIENCE, ENGINEERING, AND TECHNOLOGY
INTERNATIONAL SCIENTIFIC COMMITTEES AND EDITORIAL REVIEW BOARDS

Mission

The World Academy of Science, Engineering, and Technology supports, promotes, preserves, expands, and disseminates scholarly research knowledge in the sciences, technology, arts, and humanities while embracing the philosophical principle of the universality, freedom, and responsibility of science. The Academy is dedicated to excellence in scholarly research and innovation, creative endeavors, and fosters free inquiry while embracing diversity.

Vision

The World Academy of Science, Engineering and Technology strives to be one of the world's premier organizations in scholarly research and innovation for global sustainable development. The Academy is devoted to transforming the lives of scholarly researchers and shaping the future of our global society by offering scholarly researchers in diverse disciplines a climate of inquiry, engagement, collegiality, achievement, and global distinction.

Committees

The World Academy of Science, Engineering and Technology's International Scientific Committees and Editorial Review Boards are comprised of distinguished and competent scholars, scientists & researchers from around the world. The full list of the International Scientific Committees and Editorial Review Boards is online accessible at www.waset.org/Committees

- Aerospace and Mechanical Engineering
- Agricultural and Biosystems Engineering
- Animal and Veterinary Sciences
- Architectural and Environmental Engineering
- Bioengineering and Life Sciences
- Biomedical and Biological Engineering
- Biotechnology and Bioengineering
- Business and Economics Engineering
- Chemical and Molecular Engineering
- Civil and Environmental Engineering
- Cognitive and Language Sciences
- Computer and Information Engineering
- Control and Information Engineering
- Cybernetics and Systems Engineering
- Defense and Security Engineering
- Economics and Management Engineering
- Educational and Pedagogical Sciences
- Electrical and Computer Engineering
- Electronics and Communication Engineering
- Energy and Power Engineering
- Environmental and Ecological Engineering
- Fashion and Textile Engineering
- Forestry and Wildlife Sciences
- Geological and Environmental Engineering
- Geomatics and Civil Engineering
- Geotechnical and Geological Engineering
- Health and Medical Engineering
- Hospitality and Tourism Sciences
- Humanities and Social Sciences
- Industrial and Manufacturing Engineering
- Information and Communication Engineering
- Law and Political Sciences
- Management and Industrial Engineering
- Marine and Atmospheric Sciences
- Materials and Metallurgical Engineering
- Mathematical and Computational Sciences
- Mechanical and Mechatronics Engineering
- Medical and Health Sciences
- Nuclear and Quantum Engineering
- Nursing and Health Sciences
- Nutrition and Food Engineering
- Pharmacological and Pharmaceutical Sciences
- Physical and Mathematical Sciences
- Psychological and Behavioral Sciences
- Robotics and Mechatronics Engineering
- Software and Systems Engineering
- Sport and Exercise Sciences
- Structural and Construction Engineering
- Transport and Vehicle Engineering
- Urban and Civil Engineering

Article	TABLE OF CONTENTS	Page
1176	Adverse Drug Reactions Monitoring in the Northern Region of Zambia <i>Ponshano Kaseleketa, Simooyo O. Oscar, Lunshano Boyd</i>	3399 - 3402
1177	Differential Proteomics Expression in Purple Rice Supplemented Type 2 Diabetic Rats' Skeletal Muscle <i>Ei Ei Hlaing, Narissara Lallerd, Sittiruk Roytrakul, Pichapat Piamrojaphat</i>	3403 - 3403
1178	Antiproliferative and Apoptotic Effects of an Enantiomerically Pure β -Dipeptide Derivative through PI3K/Akt-Dependent and -Independent Pathways in Human Hormone-Refractory Prostate Cancer Cells <i>Mei-Ling Chan, Jin-Ming Wu, Konstantin V. Kudryavtsev, Jih-Hwa Guh</i>	3404 - 3404
1179	Microfluidic Method for Measuring Blood Viscosity <i>Eunseop Yeom</i>	3405 - 3405
1180	Role of Pro-Inflammatory and Regulatory Cytokines in Pathogenesis of Graves' Disease in Association with Autoantibody Thyroid and Regulatory FoxP3 T-Cells <i>Dwitya Elvira, Eryati Darwin</i>	3406 - 3409
1181	The Role of Chemokine Family, CXCL-10 Urine as a Marker Diagnosis of Active Lung Tuberculosis in HIV/AIDS Patients <i>Dwitya Elvira, Raveinal Masri, Rohayat Bilmahdi</i>	3410 - 3413
1182	Oxytocin Directly Interacts with Both ALpha-Cells and Beta-Cells and Induces Increase of Cytosolic Calcium Concentration <i>Rauza Sukma Rita, Yuko Maejima, Katsuya Dezaki, Toshihiko Yada</i>	3414 - 3417
1183	The Effect of Physical Exercise to Level of Nuclear Factor Kappa B on Serum, Macrophages and Myocytes <i>Eryati Darwin, Eka Fithra Elfi, Indria Hafzah</i>	3418 - 3421
1184	Effect of Psychological Stress to the Mucosal IL-6 and Helicobacter pylori Activity in Functional Dyspepsia and Myocytes <i>Eryati Darwin, Arina Widya Murni, Adnil Edwin Nurdin</i>	3422 - 3422
1185	Preference of Care among Breast Cancer Patients in Singapore <i>Chi Yin Ong, Hui Miao, Mikael Hartman, Helena Verkooijen</i>	3423 - 3423
1186	Effectiveness of a Communication Training on Workplace Bullying Using Mobile Phone Application for Nurses <i>Jiyeon Kang, Yeon Jin Jeong, Hoon Heo</i>	3424 - 3424
1187	Electroacupuncture Alleviates Complete Freund's Adjuvant Induced Inflammatory Pain through S100B, TRPV1, Opioid, and Adenosine Pathways in Mice <i>Hsien-Yin Liao, Yi-Wen Lin</i>	3425 - 3425
1188	TRPV1 Is a Responding Channel for Acupuncture Manipulation in the Peripheral Dorsal Root Ganglion and Central Spinal Cord in Mice <i>Hsiao-Chnn Chen, Yi-Wen Lin</i>	3426 - 3426
1189	Electroacupuncture Attenuates Mice Fibromyalgia Pain Through an Acid-Sensing Ion Channel 3 (ASIC3) and Pathway <i>Liang-Ta Yen, Yi-Wen Lin</i>	3427 - 3427
1190	Electroacupuncture Attenuates Mice Inflammatory Pain through TLR2-Dependent Pathway <i>Jun Yang, Yi-Wen Lin</i>	3428 - 3428
1191	Effects of the Amount of Static Stretching on the Knee Isokinetic Muscle Strength <i>Chungyu Chen, Hui-Ju Chang, Pei-Shan Gwo, Hwei-Ling Jhan, Yi-Ping Lin</i>	3429 - 3429
1192	Differential Effect of Technique Majors on Isokinetic Strength in Youth Judokas Athletes <i>Chungyu Chen, Yi-Cheng Chen, Po-Hsian Hsu, Hsin-Ying Chen, Yen-Po Hsiao</i>	3430 - 3430
1193	Self-Interest Instruction Modulated the Fair-Proposing Behavior in Ultimatum Game <i>Nai-Shing Yen, Tsung-Han Yang, Wen-Hsi Huang, Yun-Fan Fang, Hsun-Wei Cho</i>	3431 - 3458
1194	Training Engineering Students in Sustainable Development <i>Hoong C. Chin, Soon H. Chew, Zhaaxia Wang</i>	3459 - 3464
1195	Voices of the Grown-Ups: Transnational Rearing among Chinese Families <i>Laura Lomas Abraina</i>	3465 - 3465

1196	The Perceptions to the North Korean Defectors in South Korea and the Influencing Factors <i>Park Hyerang, Kim Hyunhui</i>	3466 - 3466
1197	New Vision of 'Social Europe': Renationalising the Integration Process in the Internal Market of the European Union <i>Robert Grzeszczak, Magdalena Gniadzik</i>	3467 - 3473
1198	Exploiting JPEG2000 into Reversible Information <i>Te-Jen Chang, I-Hui Pan, Kuang-Hsiung Tan, Shan-Jen Cheng, Chien-Wu Lan, Chih-Chan Hu</i>	3474 - 3481
1199	All-Silicon Raman Laser with Quasi-Phase-Matched Structures and Resonators <i>Isao Tomita</i>	3482 - 3485
1200	Visual Search Based Indoor Localization in Low Light via RGB-D Camera <i>Yali Zheng, Peipei Luo, Shinan Chen, Jiasheng Hao, Hong Cheng</i>	3486 - 3489
1201	Evaluation of the End Effect Impact on the Torsion Test for Determining the Shear Modulus of a Timber Beam through a Photogrammetry Approach <i>Niaz Gharavi, Hexin Zhang, Yanjun Xie</i>	3490 - 3493
1202	Performance Complexity Measurement of Tightening Equipment Based on Kolmogorov Entropy <i>Guoliang Fan, Aiping Li, Xuemei Liu, Liyun Xu</i>	3494 - 3498
1203	Theoretical Investigation on the Dynamic Characteristics of One Degree of Freedom Vibration System Equipped with Inerter of Variable Inertance <i>Barenten Suciu, Yoshiaki Tsuji</i>	3499 - 3507
1204	Disintegration of Deuterons by Photons Reaction Model for GEANT4 with Dibaryon Formalism <i>Jae Won Shin, Chang Ho Hyun</i>	3508 - 3508
1205	Evaluated Nuclear Data Based Photon Induced Nuclear Reaction Model of GEANT4 <i>Jae Won Shin</i>	3509 - 3509
1206	Design of a Remote Radiation Sensing Module Based on Portable Gamma Spectrometer <i>Young Gil Kim, Hye Min Park, Chan Jong Park, Koan Sik Joo</i>	3510 - 3510
1207	A Simple Colorimetric Assay for Paraquat Detection Using Negatively Charged Silver Nanoparticles <i>Weena Siangphro, Orawan Chailapakul, Kriangsak Songsrirote</i>	3511 - 3511
1208	Antimicrobial Activity of a Single Wap Domain (SWD)-Containing Protein from <i>Litopenaeus vannamei</i> against <i>Vibrio parahaemolyticus</i> Acute Hepatopancreatic Necrosis Disease (AHPND) <i>Suchao Donpuada, Suwattana Visetnan, Anchalee Tassanakajon, Vichien Rimphanitchayakit</i>	3512 - 3512
1209	Development of STEM Education Games on 'Petroleum' to Promote Critical Thinking and Problem Solving for High School <i>Piyarat Dormbundi, Kanokthip Yathongchai</i>	3513 - 3513
1210	Antioxidant Property and Total Phenol Content of Rice Bran Oil from KDML105 and RD6 <i>Supakorn Rattanakon</i>	3514 - 3514
1211	Colour Segmentation of Satellite Imagery to Estimate Total Suspended Solid at Rawa Pening Lake, Central Java, Indonesia <i>Yulia Chalri, E. T. P. Lussiana, Sarifuddin Madenda, Bambang Trisakti, Yuhilza Hanum</i>	3515 - 3519
1212	Impact and Risk Assessment of Climate Change on Water Quality: A Study in the Erer River Basin, Taiwan <i>Hsin-Chih Lai, Yung-Lung Lee, Yun-Yao Chi, Ching-Yi Horng, Pei-Chih Wu, Hsien-Chang Wang</i>	3520 - 3527
1213	Lifetime Assessment of Highly Efficient Metal-Based Air-Diffuser through Accelerated Degradation Test <i>Jiyeung Choi, Tae-Ho Yoon, Sunmook Lee</i>	3528 - 3528
1214	Exploring the Impact of Location on Urban and Peri-Urban Farming: A Case Study from Lusaka, Zambia <i>Cecilia Elizabeth Fähræus</i>	3529 - 3529
1215	Assessment of Rehabilitation Possibilities in Case of Budapest Jewish Quarter Building Stock <i>Wiktoria Sugár, Attila Talamon, András Horkat, Michihiro Kita</i>	3530 - 3536

Article	TABLE OF CONTENTS	Page
1216	Wet Extraction of Lutein and Lipids from Microalga by Quantitative Determination of Polarity <i>Mengyue Gong, Xinyi Li, Amarjeet Bassi</i>	3537 - 3537
1217	Response Surface Methodology to Supercritical Carbon Dioxide Extraction of Microalgal Lipids <i>Yen-Hui Chen, Terry Walker</i>	3538 - 3538
1218	Heterologous Expression of Heat-Shock Protein Improves Butanol Yield in a High-Speed Growing <i>Clostridium acetobutylicum</i> Mutant <i>Min-Shiuan Liou, Yi Shan Yang, Yang-Zhan Huang, Chia-Wen Hsieh</i>	3539 - 3539
1219	Energy Intensity of a Historical Downtown: Estimating the Energy Demand of a Budapest District <i>Viktoria Sugar, Attila Talamon, András Horkat, Michihiro Kita</i>	3540 - 3545
1220	A Bottleneck-Aware Power Management Scheme in Heterogeneous Processors for Web Apps <i>Inyoung Park, Youngjoo Woo, Euiseng Seo</i>	3546 - 3546

Effect of Psychological Stress to the Mucosal IL-6 and *Helicobacter pylori* Activity in Functional Dyspepsia and Myocytes

Eryati Darwin, Arina Widya Murni, Adnil Edwin Nurdin

Abstract—Background: Functional dyspepsia (FD) is a highly prevalent and heterogeneous disorder. Most patients with FD complain of symptoms related to the intake of meals. Psychological stress may promote peptic ulcer and had an effect on ulcers associated *Hp*, and may also trigger worsen symptoms in inflammatory disorders of the gastro intestinal. Cells in mucosal gastric stimulate the production of several cytokines, which might associated with *Helicobacter pylori* infection. The cascade of biological events leading to stress-induced FD remains poorly understood. Aim of Study: To determine the prion-inflammatory cytokine IL-6, and *Helicobacter pylori* activity on mucosal gastric of FD and their association with psychological stress. Methods: The subjects of this study were dyspeptic patients who visited M.Djamil General Hospital and in two Community Health Centers in Padang. On the basis of the stress index scale to identify psychological stress by using Depression Anxiety and Stress Scale (DASS 42), subjects were divided into two groups of 20 each, stress groups and non-stress groups. All diagnoses were confirmed by review of cortisol and esophagogastroduodenoscopy reports. Gastric biopsy samples and peripheral blood were taken during diagnostic procedures. Immunohistochemistry methods was used to determine the expression of IL-6 and *Hp* in gastric mucosal. The data were statistical analyzed by univariate and bivariate analysis. All procedures of this study were approved by Research Ethics Committee of Medical Faculty Andalas University. Results: In this study we enrolled 40 FD patients (26 woman and 14 men) in range between 35-56 years old. Cortisol level of blood FD patients as parameter of stress hormone which taken in the morning were significantly higher in stress group than non-stress group. The expression of IL-6 in gastric mucosa were significantly higher in stress group in compare to non-stress group ($p < 0.05$). *Helicobacter pylori* activity in gastric mucosal in stress group were significantly higher than non-stress group. Conclusion: The present study showed that psychological stress can induce gastric mucosal inflammation and increase of *Helicobacter pylori* activity.

Keywords—Functional dyspepsia, *Helicobacter pylori*, interleukin-6, psychological stress.

Eryati Darwin is with Andalas University, Indonesia (e-mail: eryatidarwin@fk.unand.ac.id).

Effect of Psychological Stress on Mucosal IL-6 and Helicobacter Pylori Activity in Functional Dyspepsia



Eryati Darwin, Arina Widya Murni and Adnil Edwin Nurdin
Faculty of Medicine Andalas University
Padang-Indonesia

Background

- Functional dyspepsia (FD) is a highly prevalent symptom complex and a heterogenous disorder
- Pathophysiology of functional dyspepsia remains poorly understood
- Psychological stress play a role in FD
- Prevalence of FD in the world: 10 - 30%
- It is expected to reach 60% within primary care.
- Less facilities and competencies in primary care

Aim of Study

- To determine the expression of mucosal pro-inflammatory cytokine (IL-6) and Helicobacter pylori (Hp) activity, and their association with psychological stress.

Introduction

Dyspepsia

- comes from the Greek Dys = hard or difficult, and Pepse= digestion.
- consists of various symptoms in the upper abdomen:
 - epigastric pain and/or discomfort
 - early satiety
 - postprandial fullness
 - bloating
 - nausea, vomiting
- the prevalence in the western world 20%- 25%.
- two main categories
 - organic (peptic ulcer, GERD, cancer, infectious)
 - functional dyspepsia



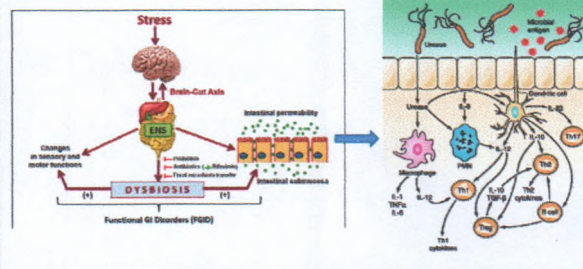
Functional Dyspepsia (FD)

- Factors that play a role in pathophysiology of FD
 - Physiological factor
 - Biologic factors
 - Environmental factors
 - Psychosocial factors
- D/: - Rome III criteria for FD
 - had a negative medical workup:
 - esophagogastroduodenoscopy (EGD)
 - 24-hour esophageal pH monitoring
 - H.Pylori assessment



Psychological stress and Functional Dyspepsia

- Brain-gut Axis
- HP activity
- Inflammation





CERTIFICATE OF ATTENDANCE AND PRESENTATION

This certificate is awarded to
ERYATI DARWIN
for oral and technical presentation, recognition and appreciation of research
contributions to ICABNB 2017 : 19th International Conference on
Advanced Biomedicine and Network Biology

Effect of Psychological Stress to the Mucosal IL-6 and Helicobacter pylori Activity in Functional Dyspepsia and
Myocytes

Eryati Darwin, Arina Widya Murni, Adnil Edwin Nurdin

INTERNATIONAL SCIENTIFIC RESEARCH AND EXPERIMENTAL DEVELOPMENT

OSAKA, JAPAN

MARCH 30-31, 2017

