



List of Applicants

2019 – 3rd International Conference on Research in Life-Sciences & Healthcare (ICRLSH), 16-17 March, Singapore

16-17 March, 2019

Conference Venue

**The National University of Singapore Society (NUSS) The Graduate Club,
Suntec City Guild House, 3 Temasek Boulevard (Tower 5), #02-301/302
Suntec City Mall, Singapore**

Email: convener@eurasiaresearch.info

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CICRLSH1904058 using 1, 2-benzenedicarboxylic acid isolated from the leaves of *Acalypha fruticosa* was tested against the larvae of *Aedes aegypti* and *Culex quinquefasciatus*. Among the fractions collected and concentrated, the sixth fraction showed a single spot on TLC which was found to be a pure compound. The structure for this compound was elucidated using UV, MS and NMR spectral data. The molecular analysis of the active fraction revealed a single major compound known as 1, 2-benzenedicarboxylic acid. The larvicidal susceptibility tests were carried out using the standard guidelines of World Health Organization (2009). The maximum larval mortality was observed in 1, 2-benzenedicarboxylic acid against *A. aegypti* and *C. quinquefasciatus* with $LC_{50}=14.77$ and $LC_{90}=36.21$ ppm and $LC_{50}=13.44$ and $LC_{90}=29.15$ ppm, respectively. This compound was used further to prepare silver nanoparticles. The synthesized nanoparticles were characterized and confirmed as AgNPs using UV-visible spectroscopy, XRD and HR-TEM analysis. The maximum activity was observed in synthesized AgNPs against the larvae of *A. aegypti* and *C. quinquefasciatus* ($LC_{50} = 3.97$ and 3.06 $\mu\text{g/mL}$; $LC_{90} = 10.91$ and 8.41 $\mu\text{g/mL}$). Rephrase test was carried out to analyze the toxicological effects of *Mesocyclops pehpeiensis* for 24 h at synthesized AgNPs. This method is considered as an innovative alternative approach that can be used to control mosquitoes.

Eryati Darwin
CICRLSH1904076 The effect of hyperglycaemia to the levels of eNOS and NO in coronary heart disease patients

Eryati Darwin

Department of Histology, Medical Faculty, Andalas University, Padang, Indonesia

Abstract

Background: Hyperglycaemia, is a major risk factor for endothelial dysfunction and lead to increase cardiovascular complication. High glucose concentration perturbs endothelial cells homeostasis and endothelial quiescence that will cause impairment of endothelial function, which characterized by deficiency in nitric oxide (NO) bioavailability. Nitric oxide production is synthesized from L-arginine by endothelial nitric oxide synthases (eNOS).

Objective: To determine the effect of hyperglycaemia to the levels of eNOS and NO that play a role in endothelial dysfunction in coronary heart disease, we studied the relationship between the level of high blood glucose with eNOS and NO in coronary heart disease (CHD) patients

Methods: In this cross sectional study, 25 hyperglycaemic patients with CHD and 25 hyperglycaemic patients without CHD of the outpatients in Department of Cardiology and Department of Internal Medicine in the regional public hospitals and fulfilled inclusion and exclusion criteria were included in this study. The blood were taken from cubital vein were collected to measure the eNOS and NO levels using the ELISA method. Data were analysed statistically using Shapiro-Wilk-test and student t test

Results: The results of this study show that eNOS levels in the group of hyperglycaemic patients with CHD were significantly lower ($p < 0.05$) than those in the hyperglycaemic patients without CHD. The levels of NO in hyperglycaemic patients with CHD were not statistically different ($p > 0.05$) in compared to the hyperglycaemic patients without CHD, although NO was tended to be lower in hyperglycaemic patients with CHD

Conclusion: eNOS and NO play a role in endothelial dysfunction due to hyperglycaemia as a risk factor for coronary heart disease

Keywords: CHD, Endothelial Dysfunction, eNOS, Hyperglycaemia, NO

Analysis of Hormone Estradiol and Estradiol Receptor in Female *Rattus Novergicus* Exposed to Propoxur

Arni Amir

Department of Biology, University of Andalas, Padang, Indonesia

Abstract


Ae.aegypti causes problems as dengue vectors (WHO, 2009). The use of an insecticide to eradicate mosquitoes has become a common way. Insecticide products are not only used by the government, but also for households with various forms and methods of application such as repellent, aerosol, mosquito coils, mat, etc. The high use of insecticides raises concerns regarding the impact on the environment and human health, this is due to the presence of active toxic substances known as propoxur. Substance of propoxur is a carbamate compound, killed thousands of people and caused damage to the nerves of hundreds of thousands of other people in Bhopal in India, this substance



Arni Amir

CICRLSH1904077

The effect of hyperglycaemia to the levels of eNOS and NO in coronary heart disease patients



Eryati Darwin, Eka Fithra Elfi, Eva Decroli, and Dwitya Elvira
Faculty of Medicine Andalas University
Padang-Indonesia

March 16, 2019

Contents

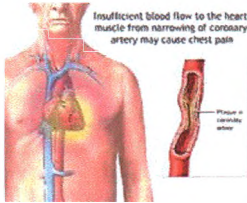
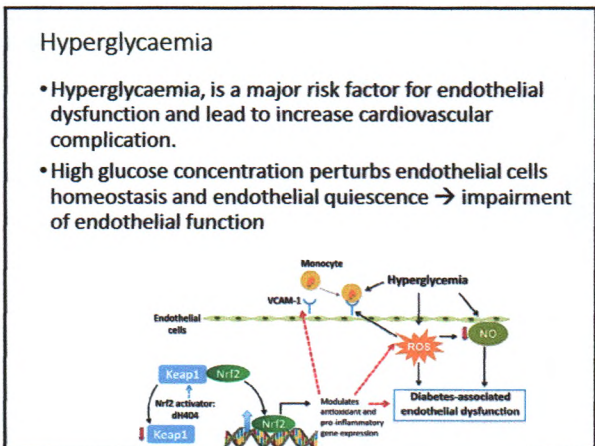
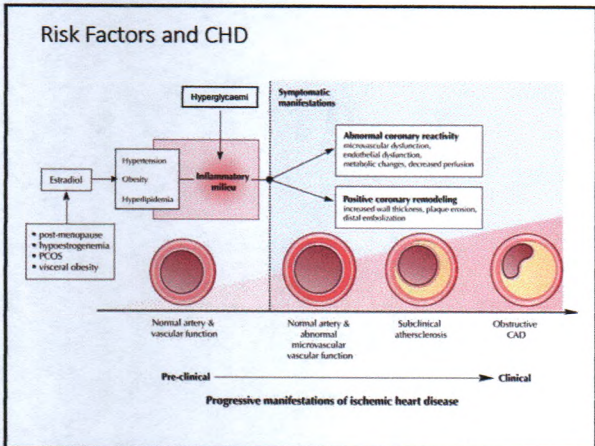
- Introduction
- Risk Factor of coronary heart disease
- Pathophysiology
 - Hyperglycaemia
 - Nitric Oxide and eNOS and Endothelial dysfunction
 - Endothelial dysfunction and CHD
- Results and Discussion
- Conclusion

Introduction

- **Coronary heart disease (CHD) is the leading cause of death worldwide**
- **High prevalence developed countries, and is seen to increase in developing countries and third world countries**
- **In Indonesia deaths from CHD has reached 5.1% and more than 30,000 patients are treated each year**

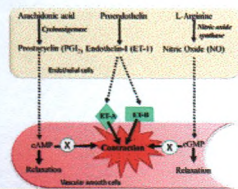
Etiology and Risk Factors of CHD

- **Narrowing of the blood vessels that supply blood to the heart by the build-up of plaque**
- **Risk Factors**
 - controlled or modifiable:
 - Diabetes
 - High blood pressure,
 - High blood cholesterol levels
 - Overweight – obesity
 - Smoking
 - Lack of physical activity
 - Unhealthy diet a
 - Stress
 - can not be controlled or unmodifiable :
 - Age
 - Sex
 - Family history
 - Ethnic.

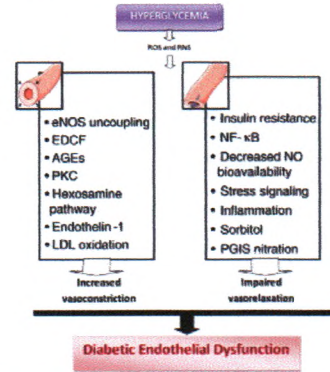



Endothelial Dysfunction

- Characterized by deficiency in nitric oxide (NO) bioavailability.
- Nitric oxide production is synthesized from L-arginine by endothelial nitric oxide synthases (eNOS).



Diabetic Endothelial Dysfunction



Aim of Study

- To determine the effect of hyperglycaemia to the levels of eNOS and NO that play a role in endothelial dysfunction in coronary heart disease, we studied the relationship between the level of high blood glucose with eNOS and NO in coronary heart disease (CHD) patients

Material and Methods

- Cross sectional study,
- 25 hyperglycaemic patients with CHD and 25 hyperglycaemic patients without CHD of the outpatients in Department of Cardiology and Department of Internal Medicine in the regional public hospitals
- Patients were fulfilled inclusion and exclusion criteria were included in this study.
- The blood were collected to measure the eNOS and NO levels using the ELISA method.
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Results

Table 1: Characteristics of subjects based on the coronary heart disease (CHD) risk factors in diabetes mellitus (DM) patients who had CHD and DM patients who had no CHD

No	Risk Factors	DM had CHD (n=20)	DM had no CHD (n=20)	p
1	Age	34-55 th	32-55 th	
2	Gender			>0,05
	Male	14	11	
	Female	8	9	
3	Smoking			
	Smoking	11	13	
	No smoking	9	7	
4	CHD family history			
	Father	5	2	
	Mother	3	1	
	Father and Mother	1	1	
	No CHD family history	11	15	
5	DM			
	DM	17	18	
	DM+other risk factors	3	2	
6	IMT			
	20 - <25	11	12	
	25 - < 30	6	7	
	> 30	3	1	

Table 2: Average of eNOS levels (ng / ml) in the DM patients who had CHD and the DM patients who had no CHD

No	Groups	n	Mean±SD	p
1	DM had CHD	20	21,292±12,415	< 0,05
2	DM had no CHD	20	29,721±11,952	

Results

- The ages of DM patients had CHD and DM patients had no CHD were in the range of 35-55 and 32-55 years old, and there were not significantly different, as well as in gender differences ($p>0,05$).
- Coronary heart disease family history of the DM patients had CHD seems tend to be higher than in the DM patients had no CHD, although there were not significantly different ($p>0,05$).
- Smoking, overweight and obesity were not different ($p>0,05$) between DM patients had CHD and DM patients had no CHD.
- There are also a similar numbers of patients with other risk factors such as hypertension and obesity.
- In both groups there were patients who also had other risk factors that can be changed such as hypertension, hyperlipidemia.
- Cigarette smoking, dyslipidaemia, obesity, diabetes, and hypertension has been gradually increasing that coalesce to increase the risk of developing atherosclerotic CHD to be pervasive across ethnicities and regions of the world (Ali et al., 2010).
- Of these risk factors, diabetes has a distinctive association with CHD. Those with diabetes have two- to four- fold higher risk of developing coronary disease than people without diabetes and CVD accounts for an overwhelming 65-75% of deaths in people with diabetes (Aranson & Edelman 2014).
- Diabetes mellitus and CHD are in a complex medical status which are closely associated and generally coexist (Ali et al., 2010).

Discussion

- Hyperglycemia induces activation of the vascular endothelium \rightarrow endothelial dysfunction, characterized by reduced nitric-oxide (NO)-dependent phenomena such as vasodilation and angiogenesis.
- Long-term effects of diabetes \rightarrow cellular injury, inflammation and significant adverse clinical consequences.
- Hyperglycemia can reduce NO production, stimulates the production of AGEs and protein kinase C (PKC) \rightarrow oxidative stress, producing ROS production \rightarrow cause tissue injury.
- Injury to endothelial tissue triggers inflammation

...discussion

- Endothelial dysfunction is the initial occurrence of atherogenesis and involves microcirculation \rightarrow inflammatory \rightarrow formation of atherosclerotic plaques that causes CHD
- Study conducted by Helbing et al., 2014: high glucose exposure on glomerular endothelial cells increased the expression of eNOS protein, but reduced release of NO.
- The reduction in NO bioavailability seems to be related to excess superoxide production and L-arginine deficiency.
- Decreasing of NO synthesis can also caused by abnormal processing of intracellular calcium and consequently a decrease in NOS activity

Conclusion

- eNOS and NO play a role in endothelial dysfunction due to hyperglycaemia as a risk factor for coronary heart disease

Thank You



Registration ID: ERCICRLSH1904076



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Certificate of Honour

This certificate of honour is awarded to

Eryati Darwin

of

Department of Histology, Medical Faculty, Andalas University, Padang, Indonesia

for

The Effect of Hyperglycaemia to the Levels of eNOS and NO in Coronary Heart Disease Patients

as

PRESENTER

In technical presentation and research contribution to

2019 – 3rd International Conference on Research in Life-Sciences & Healthcare (ICRLSH), held at

***The National University of Singapore Society (NUSS) The Graduate Club, Santee City Guild House,
Singapore***

Organized by: Healthcare & Biological Sciences Research Association (HBSRA)

Eurasia Research Conference Secretariat

16-17 March 2019



“Collaborate to Co-create”



Eurasia Research

ACCEPTANCE/ INVITATION LETTER (To Whom It May Concern)

01-Mar- 2019

Paper Title: The effect of hyperglycaemia to the levels of eNOS and NO in coronary heart disease patients
Paper ID: ERCICRLSH1904076

Conference Name: 2019 – 3rd International Conference on Research in Life-Sciences & Healthcare (ICRLSH)

Conference Dates: 16-Mar- 2019 to 17-Mar- 2019

Conference Venue: The National University of Singapore Society (NUSS) The Graduate Club, Suntec City Guild House, 3 Temasek Boulevard (Tower 5), #02- 401/402 Suntec City Mall, Singapore

Organizing Association: Healthcare & Biological Sciences Research Association (HBSRA)

Professional Conference Organizer: Eurasia Research

Name of Person Attending: Eryati Darwin

Affiliation: Department of Histology, Medical Faculty, Andalas University, Padang, Indonesia

Participation Category: Oral Presenter

Author/ s : Eryati Darwin, Eka Fithra Elfi, Eva Decroli, Dwitya Elvira

This International Conference aims to bring together industry, academia and professionals to exchange and share their scholarly ideas, research findings or experiences.

Herewith, the Conference Committee is pleased to inform you that the above mentioned delegate is cordially invited to participate in the aforesaid conference.

- *The conference committee highly appreciates the researcher's work, and we request all concerned authorities to cooperate in the funding/ leaves/ visa process.*
- *The original articles accepted for the conference will be double-blind peer reviewed and published in conference journals without any additional publication fee if the registered author fulfills reviewer/ editor guidelines within stipulated time.*
- *The co-authors (if any) are also cordially invited for the conference. They need to kindly apply and register separately.*
- *This invitation is conditional on fulfillment of required registration formalities.*
- *This letter also certifies that the delegate is also, free life-time member of the scholarly association organizing this conference.*

We would greatly appreciate if you could facilitate granting the conference delegate the necessary visa/ leaves/ grants.

Dr. F. Charles

Conference Secretariat,

www.eurasiaresearch.org

Email: convener@eurasiaresearch.info



The Effect of Hyperglycaemia to the Levels of eNOS and NO in Coronary Heart Disease Patients

Eryati Darwin¹, EkaFithra Elfi², Eva Decroli³, and Dwitya Elvira³

¹ Department of Histology Medical Faculty of Andalas University, ² Department of Cardiology Medical Faculty of Andalas University, ³ Department of Internal Medicine Medical Faculty of Andalas University

Abstract

Background:Hyperglycaemia, is a major risk factor for endothelial dysfunction and lead to increase cardiovascular complication. High glucose concentration perturbs endothelial cells homeostasis and endothelial quiescence that will cause impairment of endothelial function, which characterized by deficiency in nitric oxide (NO) bioavailability. Nitric oxide production is synthesized from L-arginine by endothelial nitric oxide synthases (eNOS).

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Conclusion: eNOSand NO play a role in endothelial dysfunction due to hyperglycaemia as a risk factor for coronary heart disease

Keywords: CHD, endothelial dysfunction, eNOS, hyperglycaemia, NO



KEMENTERIAN RISET, TEKNOLOGI DAN PENDIDIKAN TINGGI
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Laman : <http://fk.unand.ac.id> e-mail : dekanat@fk.unand.ac.id

SURAT IZIN

Nomor : 1851 /UN16.2/KP/2019

Berdasarkan surat dari Bagian Histologi Fakultas Kedokteran Universitas Andalas Nomor: 1/UN16.2/Htg/III/2018 tanggal 05 Maret 2019 perihal permohonan izin. Dekan Fakultas Kedokteran Universitas Andalas memberikan izin kepada:

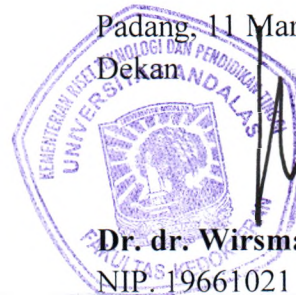
✓ Nama : **Prof. Dr.dr.Hj.Eryati Darwin, PA(K)**
NIP : 195311091982112001
Jabatan : Ketua Bagian Histologi Fakultas Kedokteran Unand
Alamat : Jl. Veteran no. 13 A Padang

untuk melaksanakan Presentasi Makalah dengan judul: *The Effect of Hyperglycaemia to the Levels of eNOS and NO in Cooronary Herath Disease* pada acara 'The 3rd International Conference on Research in Life-Sciences & Healthcare (ICRLSH)' dilaksanakan tanggal 16 – 17 Maret 2019 di Singapura.

Demikian surat izin ini dikeluarkan, untuk dapat dipergunakan sebagaimana mestinya.

Padang, 11 Maret 2019

Dekan




Dr. dr. Wirisma Arif Harahap, SpB(K), Onk
NIP. 19661021 199412 1 001

Tembusan :

1. Ketua Bagian Histologi FK Unand
2. Ketua BAPEM FK unand

The Effect of Hyperglycaemia to the Levels of eNOS and NO in Coronary Heart Disease Patients



Eryati Darwin, Eka Fithra Elfi, Eva Decroli, and Dwitya Elvira
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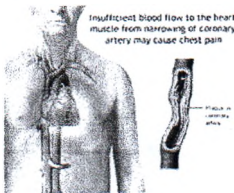
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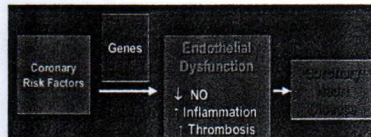
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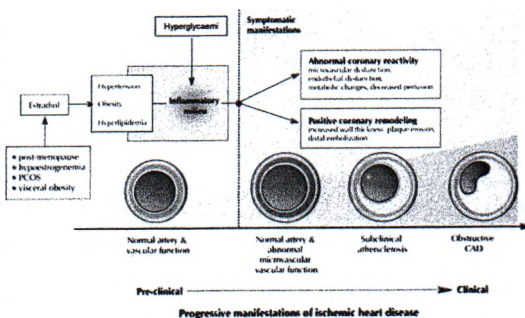


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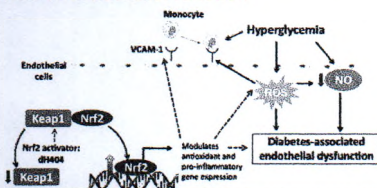
Risk Factors and CHD



Progressive manifestations of ischemic heart disease

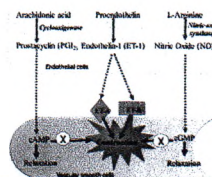
Hyperglycaemia

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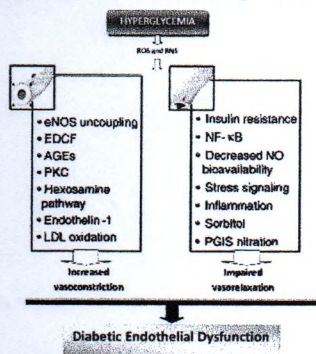


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...discusion

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