B-14

Souvenir Programme and Abstract Book

5th Federation of Islamic Medical Associations

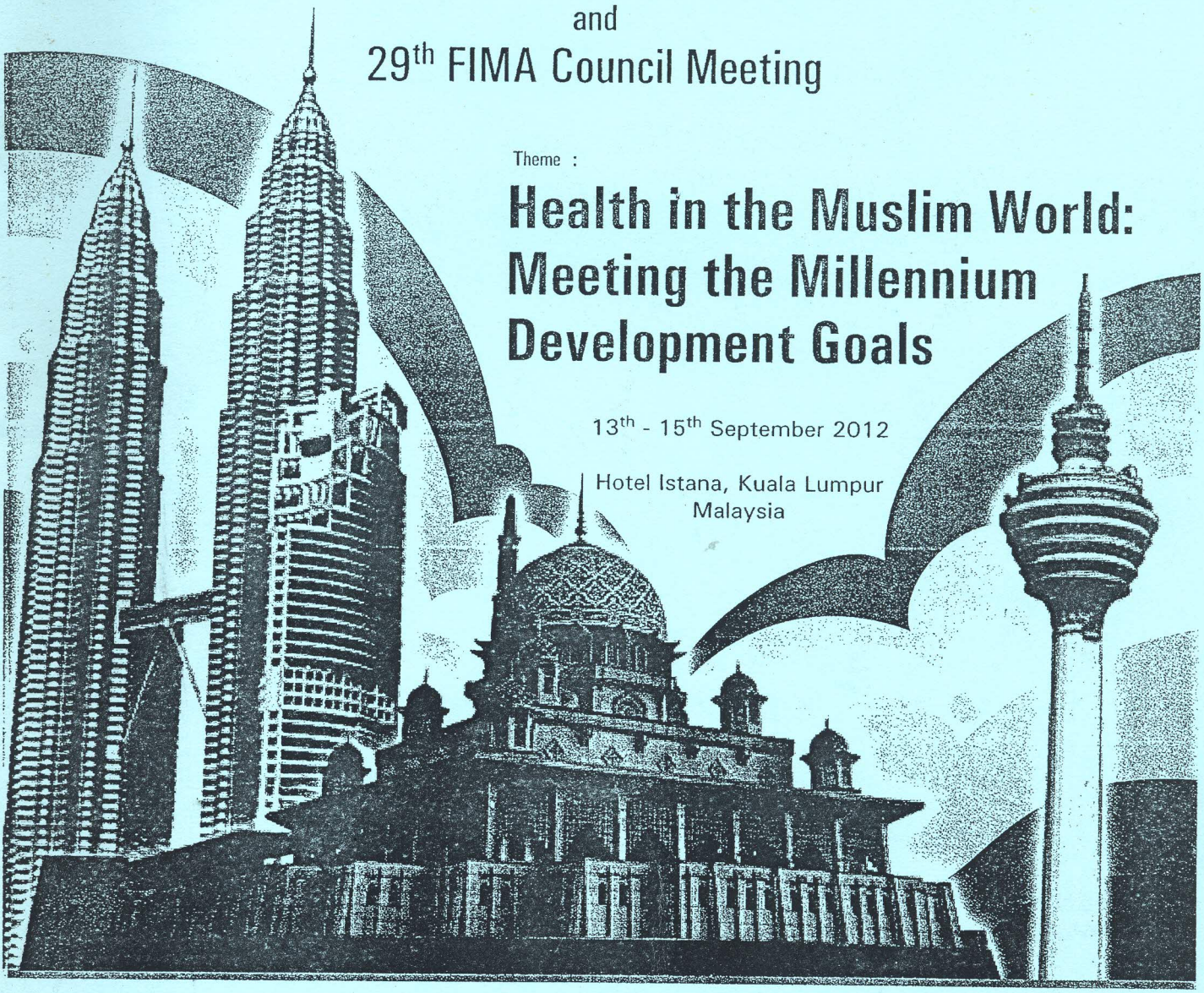
# FIMA 2012 CONFERENCE

In conjunction with

14th Islamic Medical Association of Malaysia (IMAM)

and

29th FIMA Council Meeting



Theme :

## Health in the Muslim World: Meeting the Millennium Development Goals

13th - 15th September 2012

Hotel Istana, Kuala Lumpur
Malaysia

*Organised by*

Islamic Medical Association of Malaysia

Federation of Islamic Medical Association

*In Collaboration with*

Ministry of Health Malaysia

CYBERJAYA UNIVERSITY COLLEGE of MEDICAL SCIENCES

Kolej Universiti Sains Perubatan Cyberjaya Malaysia

B-19

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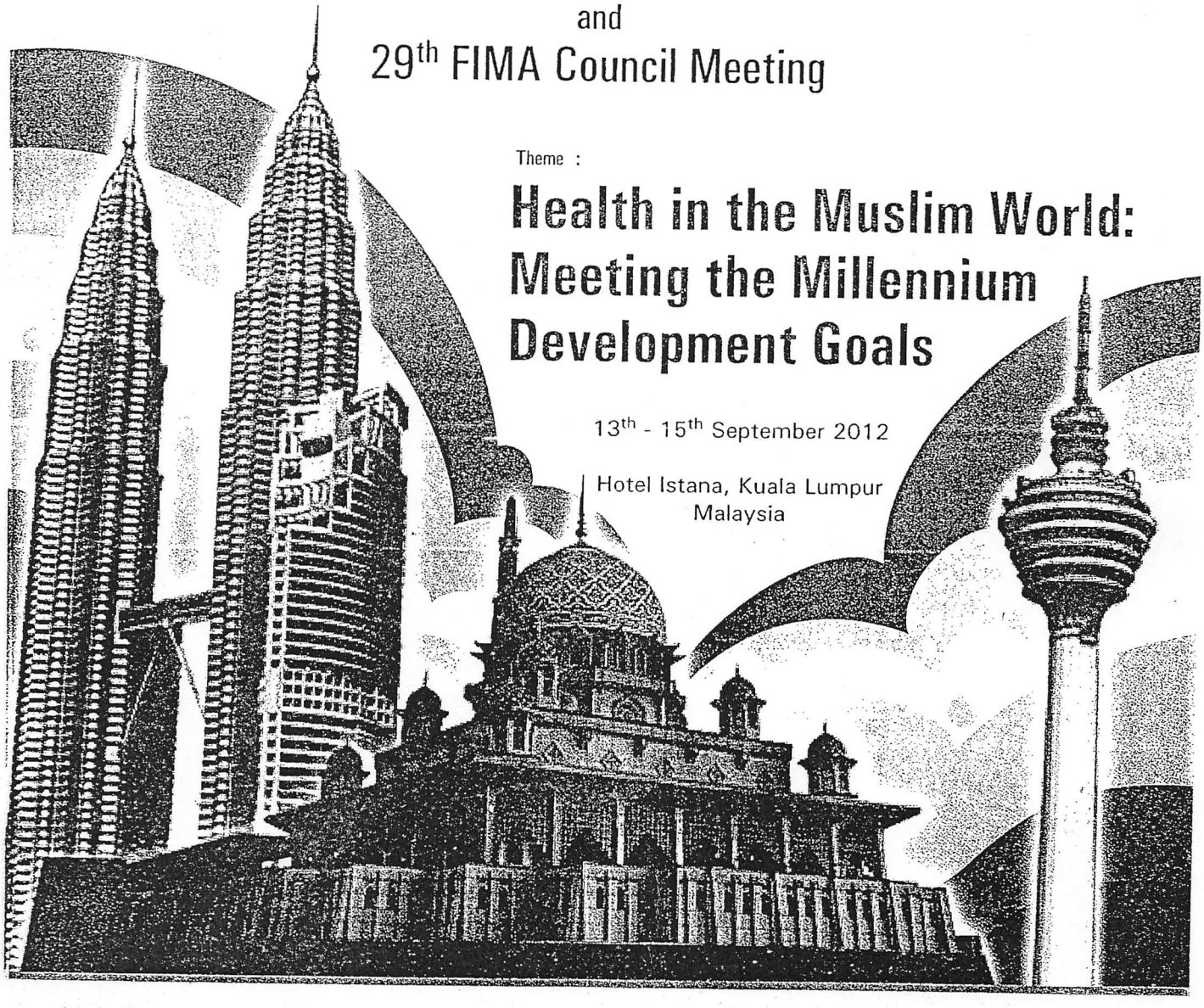

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# Contents



The Prophet Muhammad (peace be upon him) said: "If anyone travels on a road in search of knowledge, God will cause him to travel on one of the roads of Paradise. The angels will lower their wings in their great pleasure with one who seeks knowledge. The inhabitants of the heavens and the Earth and (even) the fish in the deep waters will ask forgiveness for the learned man. The superiority of the learned over the devout is like that of the moon, on the night when it is full, over the rest of the stars. The learned are the heirs of the Prophets, and the Prophets leave (no monetary inheritance), they leave only knowledge, and he who takes it takes an abundant portion.

Sunan of Abu-Dawood, Hadith 1631

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WAN AZMAN WAN AHMAD
WAN MAZLAN WAN MOHAMED WOOJDY
YONG RAFIDAH ABDUL RAHMAN
ZULFIQAR A BHUTTA
ZULKIFLI ISMAIL

## PP.15 "Polymorphism ESR α As Risk Factor of Type 2 Diabetes Mellitus (DM) in Javenese Menopausal Women of Indonesia"

***Syaefudin Ali Akhmad[1], Maliyah Madiyan[2], Pramudji Hastuti[2]***
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**Introduction:** Every year the number of patients with Diabetes Mellitus are increasing with the increasing age of women especially in menopause women. WHO predict the rising of the number of patients with diabetes mellitus in Indonesia from 8.4 million by the year 2000 become 21.3 million by the year 2030. The increasing number of menopausal women who suffer from type 2 diabetes is associated with decreased levels of estrogen. Estrogen can stimulate insulin secretion, suppresses the production of glucose by the liver and increases the expression of GLUT-4, increased glucose uptake and protects pancreatic beta cells. The role of estrogen in the metabolism of glucose is dependent on estrogen receptor alpha expression that is regulated by estrogen receptor alpha gen (ESR α). PvuII and XbaI polymorphisms in the ESR α receptor will decrease the expression of ESR α protein and may lead to decrease receptor activity, thereby increasing the risk of developing type 2 diabetes mellitus in menopause women. This study aimed to determine the ESR α polymorphism as a risk factor for type 2 diabetes mellitus (DM) in menopause women of Javanese in Indonesia.

**Methods:** The study used a case-control study design consisted of 40 subjects with type 2 diabetes and 25 healthy subjects as controls. Subjects criteria were 45-60 years of age, descent from Javenese people in the third generation of Java as the most inhabitant in Indonesia, do not suffer kidney failure or macrovascular complications. Characteristics of the subjects assessed were BMI, blood pressure, abdominal circumference and laboratory examinations consisted of total cholesterol, HDL, LDL, TG, blood glucose levels, as well as analysis of PvuII and XbaI genotypes. Genetic analyzes performed by PCR-RFLP method in the Laboratory of Biochemistry, Faculty of Medicine Islamic University of Indonesia and followed by statistical analysis using SPSS version 17:00.

**Results:** Genotype distribution of the two polymorphism regarding PvuII and XbaI in patients with DM are 22,5% (P1P1), 45% (P1P2), 32,5% (P2P2) and 12,12% (X1X1), 62,5% (X1X2) and 27,5% (X2X2) respectively. The distribution has pattern in accordance with Hardy Weinberg Equilibrum. The allele frequency of P2 as a polymorphism of PvuII mutant alelle was found in 55 % Javanese menopause women with DM type 2 whereas P1 allele frequency as wild-type allele is 44% in control subjects . X2 allele frequency as a mutant allele of XbaI polymorphism was found in 58.8% Javanese menopause women with type 2 diabetes whereas the X1 as a wild-type allele frequency of 41.3% was found in control subjects without DM. PvuII polymorphism in the form of allele P2 has Odds Ratio 1,5 95% CI (0.764-3.168). XbaI polymorphism in the form of allele X2 as a risk factor for type 2 diabetes in Javanese menopause women has risk 4 times compared to subjects with X1 allele (OR = 3.662, CI = 1.711 to 7.840).

**Conclusions:** PvuII and XbaI polymorphism was found in Javanese menopause women of Indonesia in patients with type 2 diabetes mellitus. The mutant allele frequency of P2 and allele frequency X2 are 55% and 58.8% respectively. Polymophism XbaI especially X2 allele was found as a risk factor for type 2 diabetes mellitus in Javanese menopause women of Indonesia.

*Keywords: polymorphism, ESR α, type 2 diabetes mellitus, Javanese menopause women*