

Study on placental prostate-specific antigen in preeclamptic Egyptian women

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Declaration

*This thesis has not been submitted for
a degree at this or any other
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Dedication

*To my husband, my daughter, my father,
my mother, my brother,*

&

My real friends

*Their love, encourage, help and prayers
made studies possible and to them I owe
everything.*

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Abstract

The present study was undertaken to elucidate the mechanisms for the pathogenesis of preeclampsia (PE) in Egyptian women. To fulfill the target of the study, a total of fifty women at delivery were recruited, including twenty five pregnant women with preeclampsia and twenty five normotensive pregnant females. The biomarkers studied included blood pressure, complete blood picture, albuminuria as well as placental prostate specific antigen (PSA), 17- β estradiol (E2), interleukin-6 (IL-6), lipid peroxidation (MDA), glutathione peroxidase (GPx) and trace elements (Zinc, Copper and Calcium).

Our results demonstrated a significant difference in the systolic blood pressure ($p < 0.001$), diastolic blood pressure ($p < 0.001$), albuminuria ($p < 0.001$), platelets ($p < 0.049$), hemoglobin ($p < 0.014$), placental PSA ($p < 0.002$), IL-6 ($p < 0.05$) and 17- β estradiol ($p < 0.012$) in preeclamptic women

compared with normotensive pregnant women. In addition, a positive correlation was recorded between placental PSA and each of systolic blood pressure, diastolic blood pressure, platelets and albuminuria whereas a negative correlation was recorded between placental PSA and each of placental IL-6 and 17- β estradiol.

In conclusion, the results of the current study indicate that the correlation between placental PSA and 17- β estradiol may give us a new understanding of the pathogenesis whereas the decreased placental 17- β estradiol is likely due to an alteration in the aromatase pathway which leads to an increase in the level of androgen with a subsequent increase in the PSA.

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List of abbreviations

AF	: Amniotic fluid
ALX	: Lipoxin A ₄ receptor
AT1	: Angiotensin II type 1
AT₁-AA	: Agonistic autoantibodies
AT₁R	: Angiotensin II type I receptor
AUC	: Area under the curve
bFGFs	: Basic fibroblast growth factors
BMI	: Body mass index
Ca	: Calcium
CBC	: Complete blood picture
CO₂	: Carbon dioxide
COMT	: Catechol-O-methyl transferase
COX2	: Cyclooxygenase 2
Cu	: Copper
DBP	: Diastolic blood pressure
E₂	: 17- β estradiol
E₁	: Estrone
E₃	: Estriol
EGF	: Epidermal growth factor
eNOS	: Endothelial nitric oxide synthase
FGR	: Fetal growth restriction
FLT-1	: Fms-related tyrosine kinase 1
FPSA	: Free prostate specific antigen
GPx	: Glutathione peroxidase
H₂O₂	: Hydrogen peroxide
HB	: Hemoglobin
HbA1c	: Glycated hemoglobin
hCG	: Human chorionic gonadotropin
HDL-C	: High density lipoprotein cholesterol
HIV	: Human immunodeficiency virus
HLA-C	: Killer immunoglobulin receptor ligands present on trophoblasts
HO	: Hemooxygenase
HO-1	: Heme oxygenase-1
HRP	: Horseradish peroxidase
ICSI	: Intracytoplasmic sperm injection
IFN γ	: Interferon gamma
IGF-1	: Insulin-like growth factor-1
IL-2	: Interleukin-2
IL-6	: Interleukin-6
IQR	: Interquartile range