Zoology Department
Faculty of women for Arts, Science & Education
Ain Shams University

Detection and Genotyping of Human Papilloma Virus (HPV) as a cause of Recurrent Early Pregnancy Loss

A Thesis Submitted

In Partial fulfillment of The Requirement for The Degree of Ph.D. of science in Zoology

BY

Aya Mohamed Abdel Salam Hammad

Assistant Lecture at Zoology Department,
Faculty of Women for Arts, Science & Education, Ain Shams University

Under Supervision of

Dr. Neveen Asem Ashaat
Associate Professor of Genetics
Faculty of women for Art, Science & Education,
Ain Shams University.

Prof. Dr. Adel Sayed Amin
Professor of Molecular Biology
Head of Biotechnology Research Unit
Animal Reproduction Research Institute
Agricultural Research Center

Prof. Dr. Moustafa Ibrahim Ibrahim
Professor of Obstetrics and Gynecology
Faculty of Medicine, Ain Shams University

Dr. Samah Fekry Darwish
Associate Professor of Molecular Biology
Biotechnology Research Unit
Animal Reproduction Research Institute
Agricultural Research Center

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Approval sheet

Name: Aya Mohamed Abdel Salam Hammad

Title: Detection and Genotyping of Human Papilloma Virus (HPV) as a cause of Recurrent Early Pregnancy Loss

Scientific Degree: Ph.D.

Board of Scientific Supervision

Dr. Neveen Asem Ashaat
Associate Professor of Genetics
Faculty of women for Art, Science & Education
Ain Shams University

Prof. Dr. Adel Sayed Amin
Professor of Molecular Biology
Head of Biotechnology Research Unit
Animal Reproduction Research Institute
Agricultural Research Center

Prof. Dr. Moustafa Ibrahim Ibrahim
Professor of Obstetrics and Gynecology
Faculty of Medicine, Ain Shams University

Dr. Samah Fekry Darwish
Associate Professor of Molecular Biology
Biotechnology Research Unit
Animal Reproduction Research Institute
Agricultural Research Center

Qualification

Name : Aya Mohamed Abdel Salam Hammad

Scientific Degree: **Ph.D.**

Department: **Zoology Department.**

Faculty of women for Arts, Science & Education.

University: **Ain Shams.**

Graduation Year: **May, 2004.**

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Abstract

Human papillomavirus (HPV) is the most common sexually transmitted infection (STI). HPV is so common that nearly all sexually active men and women get it at some point in their lives. The objective of this study is to assess whether or not there is an association between HPV and unexplained recurrent early pregnancy loss (REPL). Genomic DNA was extracted from the collected paired placenta and urine samples and was tested by conventional PCR method using the primer GP5+/6+ and nPCR with the pair of primers MY09/MY11 and GP5+/6+. HPV-positive samples were typed by multiplex PCR for four high-risk HPV (HR-HPV) (HPV-16, 18, 31and 51). Agreement between paired sample results was evaluated. The results indicated that**,** HPV infection was found as 16.6% and 26.7% in placental samples, 6.6% and 36.7% in urine samples by using PCR and nPCR or real-time PCR, respectively. HPV-16 was the predominance HPV type in both sample (10%) followed by HPV-31(6.6%) in both samples and HPV- types 51 and 18 (3.3%) in both samples. There was 3.3% co infection (infection by more than one type of HPV) in placenta and urine samples by types 16 and 51. There was poor agreement of placenta and urine samples results in generic and a moderate agreement for type-specific detection of HPV. The results also showed a significantly difference between number of miscarriage in HPV positive (3.38±0.744) and HPV negative (2.95±0.385) placenta samples. In conclusion HPV infection of trophoblast may cause placental dysfunction and is associated with adverse pregnancy outcomes, including recurrent early pregnancy loss.

Keywords: Human papillomavirus (HPV), molecular diagnostics, recurrent early pregnancy loss, nested PCR.

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