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Prevalence of Human Papilloma Virus in Hydatiform Mole

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Original Article

Summary

Genital HPV types may be "high-risk" types (such as HPV types 16 and 18).Molar pregnancy is a premalignant form of gestational trophoblastic diseases that occur after abnormal fertilization. We aimed to estimate the prevalence of human papilloma virus 16 & 18 in hydatidiform mole patients. So we conducted a cross-sectional study at Al_Zahraa Teaching Hospital included 30 women diagnosed as hydatidiform mole proved by ultrasound findings. Testing for IgG and IgM for Human Papilloma Virus 16 and 18 to show was performed. We found that (43.3%) of patients were seropositive, of almost 61% had HPV 16 and 39% HPV 18. In conclusion, HPV was found in 43.3% of H mole pregnancy herald the possible association of HPV as a potential triggering factor for molar pregnancy. We recommend further pregnancy follow up by serial Pap smear and HCG titer . Further studies with larger sample size still needed for further assessment

Keywords: *Human papilloma virus, hydatiform mole, Epidemiology*

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1. INTRODUCTION

Human papilloma viruses are small double stranded DNA viruses that infect the epithelium,more than 120 HPV Types have been identified (1-4), most low risk HPV types infect cutaneous epithelium and can cause skin wart,other high risk types (16,18)act as carcinogen and infect mucous membrane and may cause anogenital cancers (5). HPV resolve spontaneously ,however,persistant infection is the most important risk factor for cervical cancer.HPV infection is diagnosed by identification of its DNA in the clinical samples (6).

Molar pregnancy is a form of precancerous tumor of the uterus due to defect during egg fertilization and because HPV is carcinogenic agent its presence was studied as possible cause for this humbled egg fertilization and mole development (7-11)

Complete mole are usually diploid and androgenic in origin from duplication of single sperm (80%) or dispermic fertilization (20%).(12)

Persistent trophoblast disease can complicate 15% of complete mole and 1% of partial mole.(13,14)

2. PATIENTS and METHODS

A cross sectional study conducted at Al- Zahraa Teaching Hospital in Al- Najaf government from the period of April to September 2016. The protocol of the study was approved by the scientific and ethical committees at Kufa medical college. A written informed consent was obtained from all participants before inclusion in the study.30 women with H. mole included in the study complete history from each woman taken including (age, Parity, address, occupation, blood group, previous history of abortion and H.mole, previous history of pelvic inflammatory disease, history of Pap smear). Examination generally and obstetrical was done. These 30 women diagnosed as H. mole depending on ultrasound findings was done by trained ultrasonography who diagnosed of H.mole. On ultrasound, the mole resembles a bunch of grapes ("cluster of grapes" or "honeycombed uterus" or "snow-storm" Venous blood samples were aspirated from each patient about (5 ml)Bhcg titer was measured and complete investigation was done and centrifuge done to (3 ml) from blood samples then freazing at 0 C then send to laboratory to do test for IGg and IGm for Human Papilloma Virus 16 and 18 to prove

association between H.mole and Human Papilloma Virus 16 and 18 by enzyme immunoassay.

Principal of the assay

This assay employs the qualitative enzyme immunoassay technique. The microliter plate provided in this kit has been pre-coated antigen. Samples are pipetted into the wells with anti-human IgG conjugated Horseradish peroxidase(HRP). Any antibodies Specific for the antigen present will bind to the pre-coated antigen. Following a wash to remove any unbound reagent, a substrate solution

Statistical Analysis

Statistical Analysis was done by using SPSS (statistical package for social sciences) version 20. we use frequency, percentage, and mean with standard deviation as descriptive statistics. Chi square test had been used for categorical data. P value ≤ 0.05 regarded significant.

3. RESULTS

A total of 30 women with H. mole had been included in this study. The mean age of women was 26.23± 8.19 years , demographic and obstetrical history are shown in (Table 1). Distribution of patients with H. mole according to serum HPV sero-positivity revealed that 13 patients (43.3%) were seropositive and 17 (56.7%) sero-negative (Table 2). Among the 13 sero-positive patients, 8 (61.5%) had HPV16 type and 5 (38.5%) had HPV18 type (Figure 1). Further analysis performed to assess the association of HPV Sero-positivity with demographic characteristics and blood groups of the patients. No significant association was found between sero-positivity and these variables, in all comparison , P. value > 0.05, (Table 3)

Table1. Basic characteristics of women with H. mole under study.

Characteristics		Number	%
Age/years	≥35	6	20.0
	<35	24	80.0
Residence	Urban	14	46.7
	Rural	16	53.3
Gravidity	≥5	9	30.0
	<5	21	70.0
Parity	≥4	7	20.0
	<4	23	80.0
Abortion	≥1	15	50.0
	None	15	50.0

Table 2. Distribution of patients with H. mole according to serum HPV 16 or 18 findings.

Finding		No. of patients	%
Sero-positive	HPV16	8	26.7
	HPV18	5	16.7
Sero-negative		17	56.7
Total		30	100.0

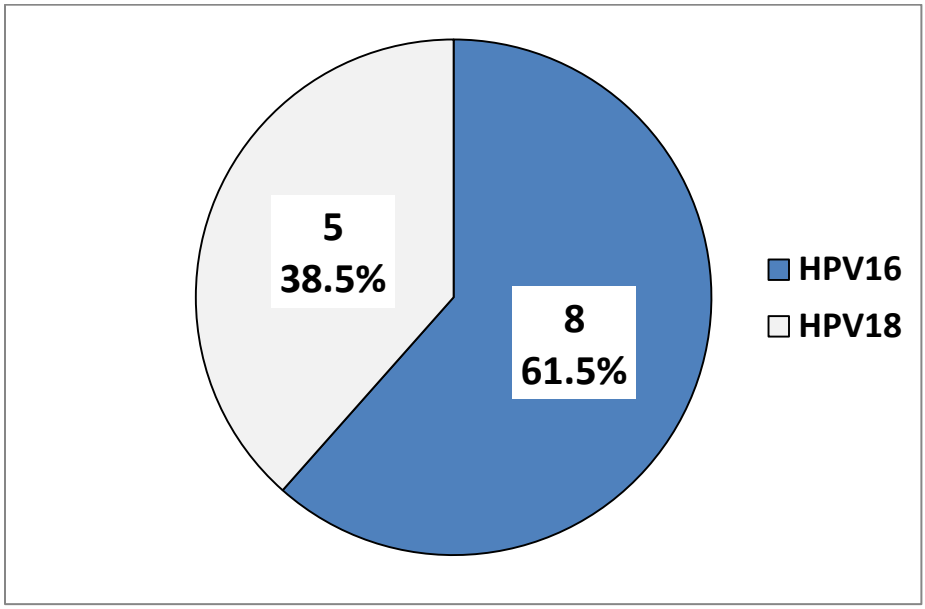

Figure 1. Distribution of HPV Sero-positive patients according to the type of HPV

Table 3. Association between HPV Sero-positivity and demographic characteristics of the studied group

		Sero-positive (n = 13)		Sero-negative (n = 17)		Total	P value
		No.	%	No.	%		
Age(year)	15-20	5	45.5	6	54.5	11	0.923
	21-35	6	40.0	9	60.0	15	
	>35	2	50.0	2	50.0	4	
Residence	Rural	7	43.8	9	56.3	16	0.961
	Urban	6	42.9	8	57.1	14	
Blood group	A+	6	50.0	6	50.0	12	0.453
	AB+	2	66.7	1	33.3	3	
	B-	0	0.0	1	100.0	1	
	B+	0	0.0	2	100.0	2	
	O-	1	100.0	0	0.0	1	
	O+	4	36.4	7	63.6	11	

4. DISCUSSION

Gestational Trophoblastic Disease (GTD) forms a group of disorders spanning from the condition of complete and partial molar pregnancy through to the condition of the invasive mole, chorioca and very rarely PTD and because molar pregnancy has ethnic association in its epidemiology especially in Asian women ,we started to high light more possible aetiologies beyond this condition and we have chosen HPV as a possible cause or associated factor for molar pregnancy. As HPV can cause a variety of problems ranging from benign condyloma to more serious neoplasia, we assume this oncogenic behavior may be linked to the genetic imbalance in the etiology of molar pregnancy.

In our study we were able to collect 30 patients diagnosed to have H.mole and we had roughly studied some parameters like age, residency, parity and blood group before we study the infectious state and we found that 80% of the patients are younger than 35 years the fact which is literary learned that molar pregnancy favors extreme of age. (15) . We found no significant association with parity and gravidity, results agreed by a study in Iran.(16) , Regarding blood group we found that molar pregnancy. Is more common in blood group A+ and O+ results agreed by studies in Iran and AL azher hospital.(18)

We found that 13 patients were sero- positive for HPV out of 30 which indicates an association between sero- positive HPV and mole pregnancy a result similar to Pae et al study, 1995 who showed that HPV -18 in 18% of H. mole and 50% of choriocarcenoma. (20).

Our study proved that HPV sero-positivity was more frequent in older age group than in teenage group the fact that young females are active in eliminating their viruses due to stronger immune response than older women. We concluded that sero- positive patients are mainly from rural area which is basically agreed with the fact that HPV mainly affects patients from lower socio-economic state. So this study may be the trigger to be more aware about this association between H.mole and HPV infection , to follow up our patients regarding the complication of HPV by serial pap smears together with HCG titer.

5. CONCLUSIONS

In our study we found that HPV of 16 and 18 serotypes was prevalent in 43.3% in patients with H.mole.

Ethical Clearance: Ethical clearance and approval of the study are ascertained by the authors. All ethical issues and data collection were in accordance with the World Medical Association Declaration of Helsinki 2013 for ethical principles for medical research involving human subjects. Data and privacy of patients were kept confidentially.

Conflict of interest: Authors declared none

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