

**STUDY ON HPV PREVALANCE IN
PATIENTS AT HAI PHONG
GYNECOLOGY- OBSTETICQUE
HOSPITAL BY REAL-TIME PCR AND
DOT BLOT HYBRIDIZATION**

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Abstract

- **Objective:** *to determine HPV prevalence and distribution of HPV types in patients at Hải Phòng gynecology- obstetrics Hospital.*
- **Methods:** *Using real-time PCR and Reverse Dot Blot Hybridization to study 533 cervical swab specimens.*
- **Results:** *The rate of HPV infection in women at Hospital with high-risk type is 10.1%, which were infected with type 16 is 20.4%; type 18 is 12.9% and 66.7% positive with 1 in 12 type (31, 33, 35, 39, 45, 51, 52, 53, 56, 58, 59, 66, 68). The infection rate with 1 type is 88.9%, coinfection with 2 types is 11.1%; No any cases of co-infection of 3 types. Co-infection between one high-risk type with one type of average-risk is the highest rate (100%), the most common co-infection is between types 16 and 1 average-risk type (66.67%).*
- **Conclusion:** *The rate of HPV infection in women at Hospital with high-risk is 10,1%. Our results is higher than that in publication.*

Question

- CTC is closely related to high-risk genital HPV (Human Papillomavirus (HPV) infection.
- Based on the potential for causing tissue damage, particularly the potential for CTC, HPV is divided into two groups: high risk and low risk.
- Identifying HPV types plays a very important role in assessing the risk of cervical cancer and some other types of genital cancers.

Question

- The most accurate detection method for HPV infection is molecular biology techniques, including the HPV-type assay using the Reverse Dot Blot Hybridization technique.
- Therefore, we use Real-time PCR and Reverse Dot Blot Hybridization techniques to study this topic for the following purposes.
 - 1. Determine the prevalence of HPV infection.
 - 2. Determine the distribution of HPV types in cervical injury patients at HP gynecological hospital from 6/2016 -3/2017.

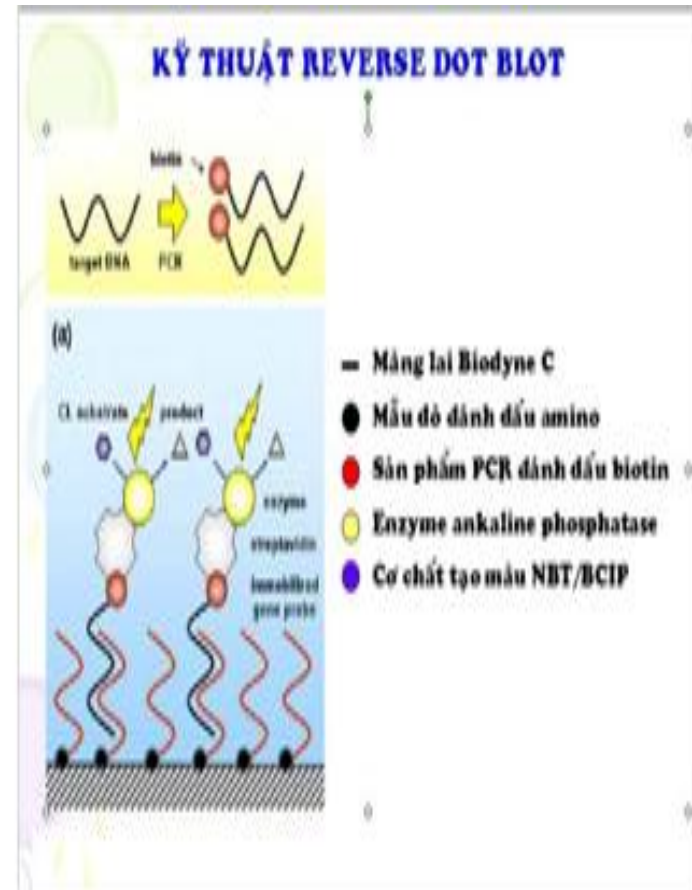
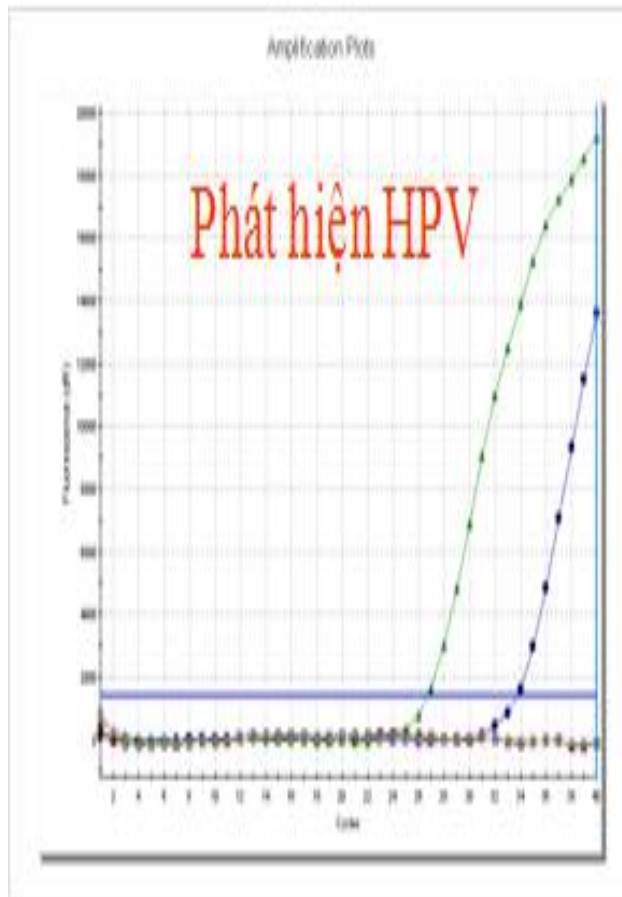
Research Methods

- 2.1. Research subjects
- The patient visits gynecology at Haiphong Hospital.
- Sampling time: from June 2016 to March 2017.
- 2.2. Research Methods
- Retrospective study with convenient sample size.
- Statistics from labconn test management software.
- - Criteria for selection of subjects:
- Women have had sex.
- Currently not pregnant.
- The patient was examined, examined for CTC and tested for Thinprep pap test. Patients diagnosed with benign CTC lesions are admitted to the study.

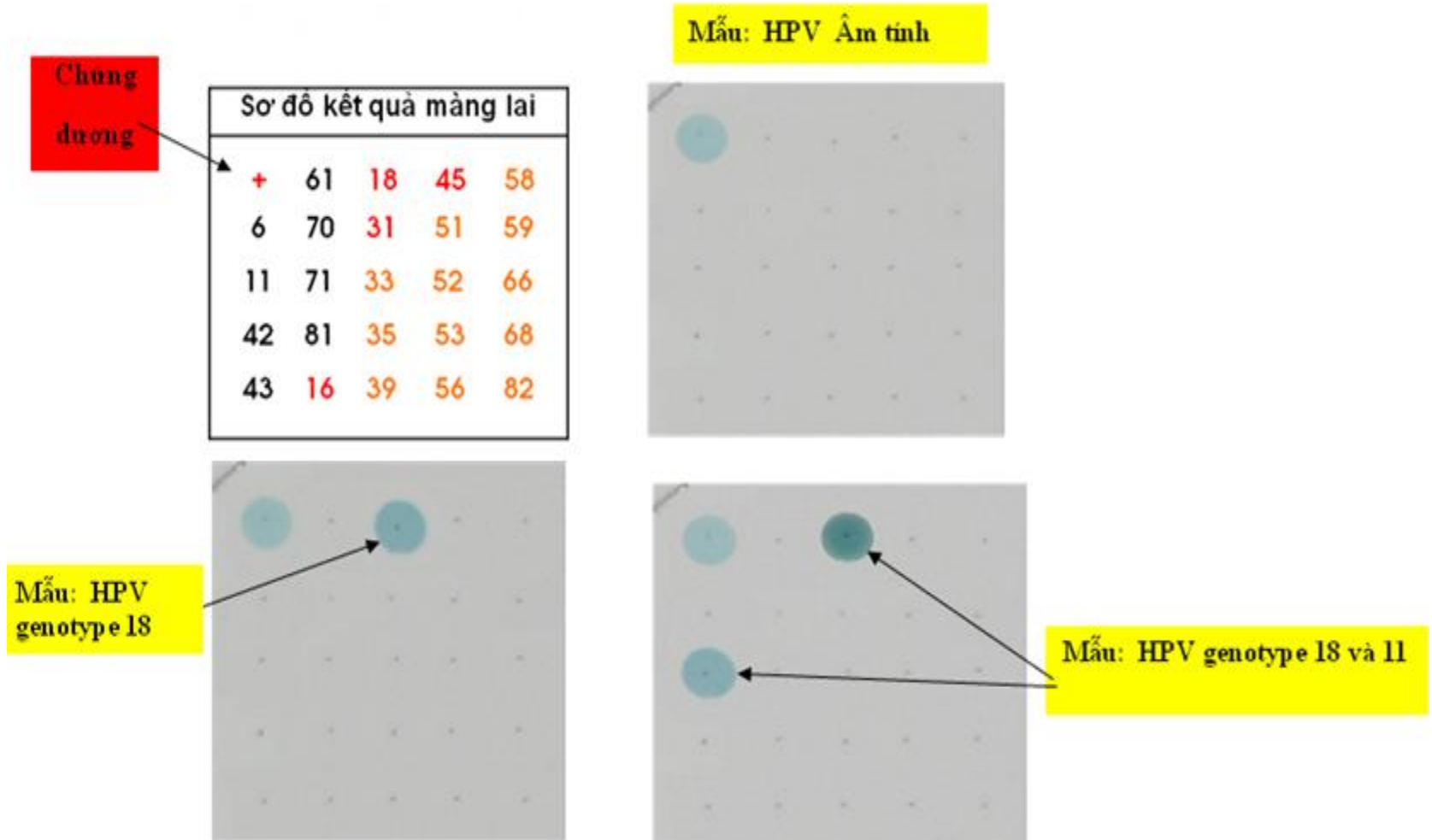
Research Methods

- * Process for HPV type identification:
- • Receipt of specimens: cervical smears.
- Total DNA extraction by Phenol - chloroform method.
- Nested Real-time PCR reaction: on the Cobas X-4800 from Roche Dianostique (France),
- Analyze, compare, compare results with hybrid membrane diagram

Picture 1. HPV Real-time PCR and the principle of Reverse Dot Blot technique



Picture 2. HPV type marking results using the Reverse Dot Blot technique



Result

Prevalence of HPV infection

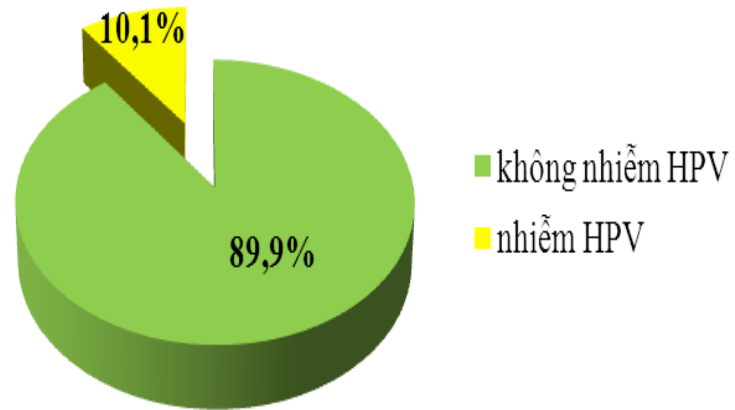


Chart 1. *Prevalence of HPV infection*

Result

Involvement of HPV infection by age group

Table 1. Prevalence of HPV infection by age group

age	HPV DNA (-)	HPV DNA (+)	Total
≤ 25	28	4	32
26 - 35	182	25	207
> 35	269	25	294
Total	479	52	533
medium	38,3 9	36,7 8,8	
The Youngest	17	21	
The oldest	75	57	

Result

- Distribution of HPV types

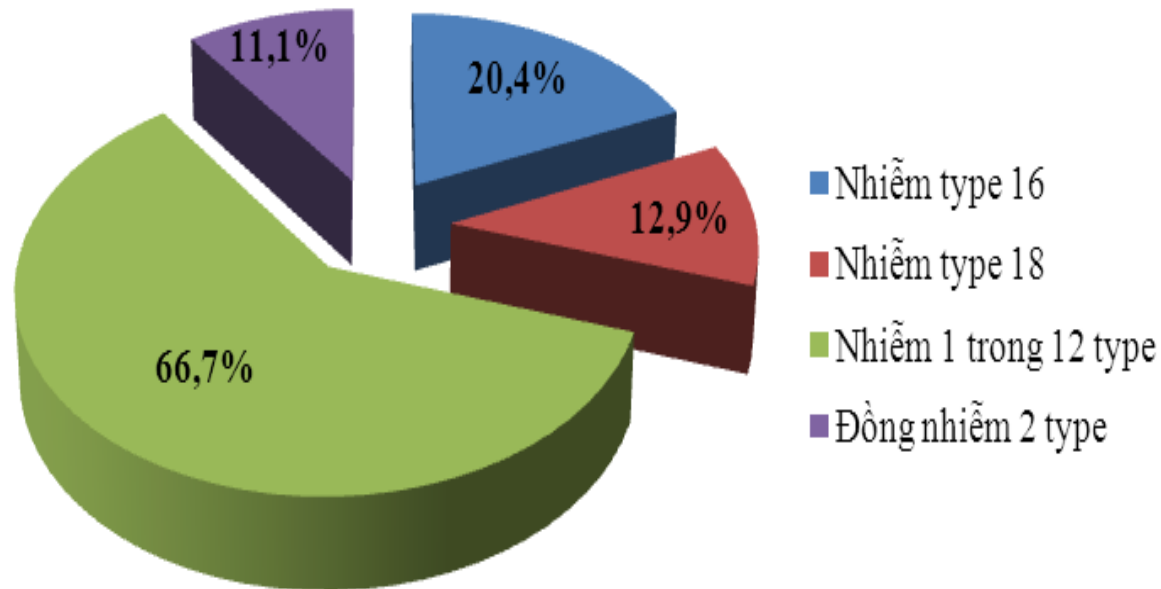


Chart 2 . Percentage of HPV types

Discuss

- About the test method
- Advantages Real-time PCR and Reverse Dot Blot
- - simple operation
- Fast results
- High sensitivity to 1 IU / reaction
- 100% specificity
- Identified 24 types of HPV (18 types of high risk and 6 types of low risk).
- Identify easily the infection and co-infection of HPV types on the same specimen.

Discuss

About the age of HPV infection

Mean age between infected and non-infected groups was not significantly different $p > 0.05$.

At age <25 (age can still vaccinate for HPV prevention), the percentage positive for HPV is 4/32 (12.5%). Therefore, it is recommended to test for the type of HPV before deciding to vaccinate women under 25 who have sex.

Age <35, positive for HPV is 25/207 (12.1%). According to Remi Catabelle (France), up to 80% of patients in this age group, HPV are naturally excreted due to the immune system (called natural or transient infection).

Age > 35, the positive rate was 25/269 (9.3%). According to Remi Catabelle (France), if an infection lasts for more than a year, about 10-20% of infections, after 2 to 5 years, can progress from a benign CTC lesion to low grade Malpighi epithelial lesions. (CIN 1). After that, 3 to 5 years progress to lesions in the high level Malpighi epithelium (CIN 2-3). Then 4 to 10-15 years into cancer.

Discuss

- **About the prevalence of HPV types**
- - Prevalence of HPV infection In patients with CTC lesions in Hai Phong, 10.1%
- Nguyen Huu Quyen and technique of surveying 24 types of HPV in women with cervicitis is 29.8%
- Le Trung Tho and Tran Van Hop in Hanoi (2009) surveyed women in general in the community, the prevalence of HPV was 5.13% [6]
- Vu Thi Nhung surveyed in Ho Chi Minh City (2007) was 12% [9].
- This suggests that the incidence of HPV infection in women with cervical cancer is much higher than that of normal women in the community.

About the prevalence of HPV types

- In HPV (+) cases, we identified 33.3% of patients with two high risk types. Of which type 16 accounted for the highest rate of 66.7%, type 18 (33.3%).
- Therefore, CTC women who need to be consulted periodically in conjunction with Thinprep PAP test, CTC to detect early cancer and cancer.

Conclude

- The prevalence of HPV infection in women with CTC lesions at gynecology clinics at Hai Phong Obstetrics Hospital was 10.1%, higher than the prevalence of HPV in women surveyed in general in the community.
- - High-risk type was 33.3%; The average risk is 66.7%

Conclude

- The prevalence of one type was 88.9%, two types of co-infection was 11.1%; There are no cases of co-infection of 3 or more types.
- 100% co-infection between a high risk type and an average risk type.
- Co-occurrence is most commonly between type 16 and type 1 medium risk (66.7%).

