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HPV typing in the Department of Pathological Anatomy Cytology of CHU ORAN: about a series of 142 HPV tests

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Introduction: Human papillomaviruses (HPVs) are a group of small double stranded DNA viruses that show tropism for squamous epithelium. HPV types are subdivided into high risk and low risk, probably high risk having the potential to cause cancers and warts around the genital organs. High risk HPV types are the causative agents of cervical (99%), penile, vaginal, vulvar, anal and oropharynx cancers. Current methods available for HPV detection include polymerase chain reaction (PCR) based techniques, DNA in situ hybridization (ISH), RNA ISH and immunohistochemical detection of the p16 (CDKN2A), E4, E6 and E7.

Methods: In our pathology department CHU Oran, in 2023, we tested 142 patients for HPV using the DIGENE Hybrid Capture system and this together with a cervical smear (Papa Nicolaou smear) in order to identify women presenting a high risk development of cervical cancer taking into account screening recommendations:
Under 21 years: no screening recommended
21 - 29 years: cytology (Pap smear) alone every 3 years with HPV reflex if ASCUS
30 - 65 years: Human papillomavirus (HPV) and cytology cotesting every 5 years (preferred) or cytology alone every 3 years (acceptable)
Over 65 years: no screening recommended if adequate prior screening has been negative and high risk factors are not present.
The main steps of Hybrid Capture 2 HC2 technology for HPV typing are (the cytological samples are previously collected in a denaturing solution in order to release the target DNA of the HPV present). 1- Hybridization of the RNA probe with the target DNA.
2- Capture of Hybrids (the DNA/RNA hybrids are captured on a microplate phase coated with specific anti-DNA/RNA hybrid antibodies).
3- Signal amplification: the captured DNA/RNA hybrids are detected by a multitude of antibodies coupled to alkaline phosphatase; the signal obtained can be amplified 3000 times.
Reading and interpretation are done after the chemiluminescence reaction.

Results: of the 142 tests, 6 were positive, 23 inconclusive and 113 negative. This table summarizes the positive cases:

	Age	Socio-economic level	Age of first sexuel intercourse	Menarche	Gestation /Parity	Clinical signs	Risk factors Appearance of the cervix	Cervical smear
01	39	medium	18	12	G0/P0	Metrorrhagia Dyspareunia	None	Normal
02	38	-	20	15	G5/P4	Leucorrhoea cystitis	None	ASCH
03	50	-	23	14	G5/P3	Leucorrhoea	None	Inflammatory+ AGC

04	44	-	20	13	G4/P4	Leiomyoma	Hormone therapy Immuno Depression Passive Smoking	Normal
05	37	-	18	14	G3/P3	Metrorrhagia Leucorrhoea	Contraception	Inflammatory
06	43	-	30	13	G3/P3	Leucorrhoea Dyspareunia Pelvic pain	None	Inflammatory

Reading the cervical smear according to the BETHESDA SYSTEM.
Positive patients are referred for a rigorous colposcopic examination visualizing the entire junction area; in the absence of proven cervical lesion, close monitoring remains essential.
Several studies have shown that the sensitivity of the HPV test is increased in women over 30 years old, whereas in younger women HPV infection is very common but often short-lived; The HPV test is not recommended for mass screening in women under 30 because it would reveal many spontaneously curable infections.
If the HPV test is negative after a smear with minor cytological abnormalities, the risk of cervical cancer is very low, a control smear after one year is recommended.
If the HPV test is positive the risk of cervical cancer is higher, a colposcopy with specific local treatment of the lesions: Cryotherapy, Laser Vaporization, Excision by diathermic loop, Connization.
The HC2 HPV DNA test should be used in conjunction with cytology and other clinical data, physical examinations, and a complete medical history in accordance with appropriate patient management procedures. The results obtained with the HC2 HPV DNA test should not be used as the sole basis for clinical judgment and patient treatment.

Conclusion: Cervical cancer screening can certainly be improved in our country by replacing the practice of Pap smear alone with the combination with HPV testing at a more spaced interval in complete safety and to determine the need for colposcopy or other cervical cancer screening procedures. Follow up.

References: Ann Biol Clin Vol71 spécial 1, novembre 2013. Journal of Medical Virology, 2011. Ronco, G. et al. (2006) Human papillomavirus testing and liquid-based cytology: results at recruitment from the new technologies for cervical cancer randomized controlled trial. J. Natl. Cancer Inst. 98, 765. 2. . Mayrand, M.-H. et al. (2007) Human papillomavirus DNA versus Papanicolaou screening tests for cervical cancer. N. Engl. J. Med. 357, 1579.Fatimah S Alhamlan, Mohamed B Alfageeh, Mona A Al Mushait, Ismail A Al-Badawi, Mohammed N Al-Ahdal, Human Papillomavirus-Associated Cancers. Nat Rev Cancer 2010; 10 h 550. Nat Rev Cancer 2010; 10:550, Vaccin 2006; 24:S3/11