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Original Research Article

Profile of patients with HPV infection at the regional hospital of Saint-Louis, Senegal

Ousmane Thiam, Djibril Bahaid S. O. W.*, Seynabou L. O., Cherif Cheikh Tourade S. A. R. R.

Saint-Louis Regional Hospital, Saint-Louis, Senegal

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***Correspondence:**

Dr. Djibril Bahaid S. O. W.,

E-mail: cassoumane@yahoo.fr

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ABSTRACT

Background: Objectives of current study was to define the sociodemographic characteristics of patients, to determine the frequency of HPV infection at the CHRSL and to describe factors associated with HPV infection.

Methods: This was a prospective cross-sectional study conducted in the gynecology-obstetrics department of the Saint Louis Regional Hospital Center from November 11, 2019 to November 11, 2021, a period of 24 months. We studied sociodemographic, clinical and test results characteristics. Samples were taken from patients in the gynaecological position using a dedicated kit (cytobrush and tube). Viral research was carried out using the Atila Biosystems device for amplification and detection of viral DNA. This test genotypes HPV 16, 18 and 45, and detects 12 other HR HPVs (31, 33, 35, 39, 51, 52, 56, 58, 59, 66 and 68) simultaneously using three probes labelled with different fluorophores. Analysis was performed using Epi-Info software and Excel 2010.

Results: The study population comprised 128 patients. The mean age of the patients was 41.95 years, with extremes of 23 and 70 years. They were married (92.97%) and housewives (46.88%). Almost all patients (77.34%) were genitally active. The average age at marriage was 21.78 years, and polygamous households predominated (53.91%). The average age at first intercourse was 20.05 years. The average age at first pregnancy was 21.78. Over (57.81%) of patients had at least two partners. Incense was used in 97.66% of cases. The viral HPV test was positive in (38.28%) of patients. High-risk papillomaviruses were the most common, at 63.27%. Colposcopy was performed in 17.19%; normal and satisfactory in (63.64%) of patients, with 22.27% of cervical biopsies, and histology showed one CIN2 and two CIN3. Therapeutically, one thermoablation and two hysterectomies were performed.

Conclusions: HPV viral typing in primary screening for cervical cancer offers opportunities and remains realistic and feasible in less developed countries such as Senegal, despite modest resources.

Key words: HPV typing, Saint Louis regional hospital, Cervical cancer screening

INTRODUCTION

Cervical cancer poses a public health problem worldwide, with 570000 new cases and 311000 deaths per year in 2018.¹ More than 75% of cervical cancer deaths occur in Third World countries. It is a cancer that increasingly affects younger women between the ages of 20 and 50, with peak incidence at 40. Yet it is a preventable cancer when detected early. Because it develops over several years, it remains one of the most easily screened cancers. Today, human papillomavirus testing is possible. The

hybridization test and PCR are designed to detect high-risk papillomaviruses (HPV-HR), the agents required for the development of cervical cancer. With the aim of contributing to the fight against cervical cancer, we conducted a study to investigate the profile of HPV-infected patients at the Saint-louis regional hospital.

METHODS

We conducted a retrospective, descriptive and analytical study. The study setting was the gynecology and obstetrics

department of the Saint Louis regional hospital (Dakar) and the study period was from November 11, 2019 to November 11, 2021. Our study included all women received for cervical cancer screening, apart from pregnancy, metrorrhagia and not presenting with confirmed cervical cancer. The following data were collected: socio-demographic characteristics, history (gynecological and obstetrical), factors associated with HPV infection, results of HPV viral test; VIA/VILI, FCV, colposcopy, management. Data analysis was carried out using the following software: Microsoft Excel, Epi info 7.2 and R 4.3.3. Bivariate analysis enabled us to search for associations between variables using the appropriate statistical tests according to their conditions of applicability. The alpha risk of error was set at 5%.

RESULTS

Study population

The study population consisted of 128 patients.

Socio-demographic characteristics

The mean age of the patients was 41.95±9.78 years. The median was 41 years, with extremes of 23.00 and 70.00 years. Mean age at first intercourse was 20.05±5.54 years. Mean age of 1st pregnancy was 21.78±4.84 years. Large multigestations accounted for 42.97%. Multiparous women accounted for 46.88%. One patient in two (50.78%) lived in the department of Saint-Louis. Married women were in the majority (92.97%). Marriage was polygamous in 53.91% of cases. They had no income-generating activity for 46.88%. The number of sexual partners was ≥ 2 in 57.81%. Patients with secondary education were in the majority (58.59%). Hormonal contraception was used by 59.38% of them. Genitally active patients accounted for 77.34%. The majority (97.66%) of patients used home smokes.

HPV viral test results

HPV testing was positive in 38.28% (N=49) of patients, as shown in the following table. HPV HR was the predominant HPV type in 63.27% (N=31).

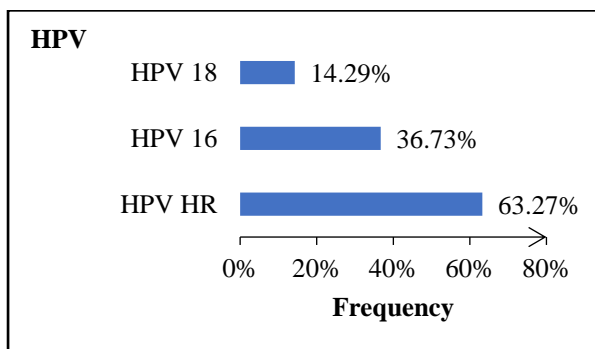


Figure 1: Distribution of patients by HPV type.

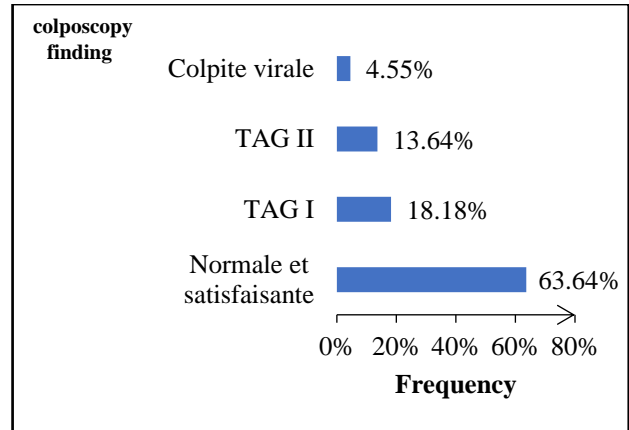


Figure 2: Distribution of patients according to colposcopy findings.

Colposcopy results

Only 17.19% (N=22) of patients had undergone colposcopy. Colposcopy was normal and satisfactory in 63.64% (N=14).

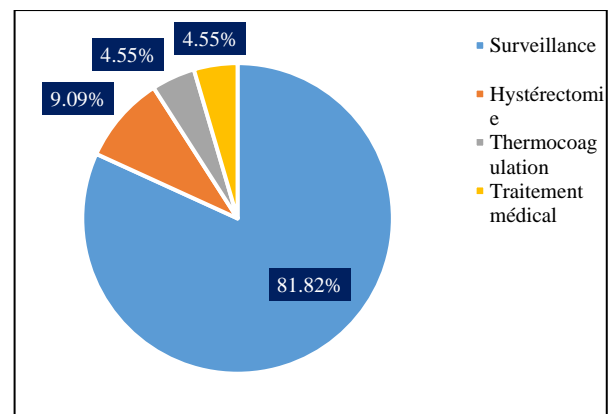


Figure 3: Distribution of patients by type of treatment.

Histological aspects

Of the patients who had undergone colposcopy, only 22.27% (N=6) had undergone biopsy. One CIN2 and two CIN3 were found in 16.67% (N=1) and 33.33% (N=2) respectively, as shown in the following table.

Therapeutic aspects

The majority of patients with colposcopy (81.82%, N=18) had undergone surveillance.

Analytical results

The analytical study found that age, marital status, occupation, level of education, age at first intercourse, age at first pregnancy and number of providers were not found to be risk factors, unlike the use of home incense.

Table 1: HPV test results by socio-demographic characteristics.

Facteurs associés au test positif	HPV				Total	P value
	Positive		Négative			
	N	%	N	%		
Age						
<40	24	45.28	29	54.72	53	0.17
≥40	25	33.33	50	66.67	75	
Marital status						
Married	48	40.34	71	59.66	119	0.15
Not married	1	11.11	8	88.89	9	
Occupation						
House wife	23	38.33	37	61.67	60	0.99
Employee	16	38.10	26	61.90	42	
Liberal	10	38.46	16	61.54	26	
Level of education						
Elementary	11	25.58	32	74.42	43	0.10
Middle	3	50.00	3	50.00	6	
Secondary	32	42.67	43	57.33	75	
University	3	75.00	1	25.00	4	
Age at first sex (years)						
<20	28	38.36	45	61.64	73	0.98
≥20	21	38.18	34	61.82	55	
Age at first pregnancy (years)						
<20	12	28.57	30	71.43	42	0.08
≥20	35	44.87	43	55.13	78	
Number of partners						
One	21	38.89	33	61.11	54	0.90
Several	28	37.84	46	62.16	74	
Using incense						
Yes	26	47.27	29	52.73	55	0.04
No	21	30.00	49	70.00	70	

DISCUSSION

Sociodemographic factors

In our study, the mean age of patients was 41.95 years, with a standard deviation of 9.78 and extremes of 23 and 70 years. The mode and median were 40 and 41 years respectively. The 40-50 age group was in the majority (39.84%) (N=51). Our results are identical to those found by Zohocon in Benin, where the mean age was 40 years, with extremes of 18 and 88 years.² On the other hand, our mean age was higher than that found by Cissé, which was 39.9 years with a standard deviation of 6.6 and extremes of 30 and 55 years.³ The disparity is explained by the fact that in this study, unlike ours, patients were not selected. Recent studies show that cancer is increasingly affecting younger women between the ages of 20 and 50, with peak incidence at 40.⁴ In our study, the proportion of younger women was higher among patients with a positive test (45.28% vs. 33.33%). In Senegal, women's participation in the screening campaign is very low, at 6.9% for those aged 18-69 and only 1.9% for those aged 40 and over.⁵ This could be explained by the absence of a screening campaign in our country. The WHO recommends screening women aged over 30 and/or younger, the high-risk group, and

continuing until the age of 65, provided that the two previous smears are negative.⁶ HPV viral testing, starting at age 30, would increase the specificity of the test.

In our series, the majority of patients were married (92.97%). Our results are similar to those found by Traore et al.^{3,7} Married or widowed women were the most frequent participants in cervical cancer screening campaigns.⁸ In our study, the contraception rate was 59.38%. These results are higher than those found by Traore 23% and Biaye 42%.^{9,10} It is also considered a potential factor in the development of cervical cancer. However, in our study, only 39.02% of HPV-positive women used contraception. This may also be explained by the fact that contraception was not exclusively hormonal. These results concur with those of Isautier.¹¹ Cervical cancer is generally a pathology of genitally active women. In our study, in which genitally active women accounted for 77.34%, the HPV test was mostly positive (60.00%) in peri-menopausal women. Our results are higher than those found by Khaola in Morocco (58.3%).¹² Some authors consider gestiture as a cofactor linked to uncontrolled sexual activity or unplanned maternity.¹³ This is consistent with our work, where the percentage of positive HPV tests was higher in multigestational and multiparous women. Our study

population was dominated by multigestational and multiparous women (42.97% and 46.88% respectively).

A correlation between age at first intercourse and the occurrence of cervical cancer was established.¹⁴ In our series, the mean age at first intercourse was 20.05 years, with extremes of 10 and 44 years, but almost half our patients (38.36%) had had their first intercourse before the age of 20; similar to those found by Holmes in Senegal, where 93.7% of patients had their first intercourse before the age of 20.¹⁵ first sexual intercourse before age 20. The mean age at first pregnancy was 21.72 years, with extremes of 14 and 40 years. In our study, more than half the patients (57.81%) had at least two sexual partners, and patients living in polygamous relationships were at greater risk of HPV infection (41.18% vs. 36.21%), and consequently of developing precancerous and then cancerous lesions of the cervix.

HPV viral test results

The test was positive in 38.28% of patients screened. These results are similar to those found by Seynabou with 35% and comparable to the average in sub-Saharan Africa 29.6%.^{1,16} However, our results are far from those of Cisse, who found 11.8%.³ This could be explained by the fact that our study population was randomly selected. In our series, the most frequently encountered virus types were HPV HR (63.27%), followed by HPV, 16 (36.73%) and HPV, 18 (14.29%). Our results were comparable to those of Cisse for HPV, 16 (35.23%) and HPV, 18 (23.51%); Seynabou for HPV HR 79.41%. This proves the disparate distribution of HPV genotypes in Africa depending on the country.¹⁶⁻¹⁸

Colposcopic aspects

In our study, colposcopy showed grade II atypical transformation (TAGII) in 13.64%, TAGI in 18.18%, and viral colpitis in 4.55% of cases. Our results are similar to those found by Cisse, (TAGII 11.7%, and TAGI in 11.7%); whereas for viral colpitis our results are discordant; which are respectively 17.6% of cases.³ This could be explained by the fact that only some patients had undergone colposcopy. Furthermore, our results differ from those of Gassama in Dakar, with 36.6% TAGII, 31.5% TAGI, and viral colpitis in 10.4%.¹⁹ In our series, colposcopy was normal and satisfactory in 63.64% of cases, comparable to the results of Cisse, which were 53% of cases.³

Histological aspects

In our study, of the patients who had undergone colposcopy (N=22), only one (22.27%) had undergone biopsy for pathological examination. Our results report (50.00%) pre-cancerous CIN2 lesions (16.67%); CIN3 (33.33%) on anatomopathological examination. Our results are similar to those of Cisse for CIN3, 25%.³

Therapeutic aspects

In most cases, treatment consisted of surveillance. We performed two vaginal hysterectomies in postmenopausal patients for CIN3, i.e., 9.09%. These results are similar to those of Cisse, who found one hysterectomy (5.88%) for CIN3.³ In our case, hysterectomy is recommended on the patient's recommendation in the face of poor compliance; with smear and colposcopic surveillance of the vaginal slice; in search of VIN. Currently, surveillance in the case of radical surgery consists of a smear test and colposcopy 3 months after surgery; if normal, surveillance should be repeated at 6 months, then 12 months, and repeated annually for 20 years.²⁰ In our study, patients were monitored in accordance with the recommendations. No abnormalities have been detected to date.

Factors associated with a positive HPV viral test

In our series, the factors associated with a positive HPV test were: marital status: married women were (40.34%); 4 times more likely to have a positive HPV test; OUEDRAOGO et al had found in 2011 that only the marital status of women living alone and/or single was identified with a risk-ratio of 0.78 (p=0.028); which is in line with BARDIN's study in 2008.²¹ This result can be explained by the fact that unmarried women were widowed at an advanced age. Marital status: women in polygamous relationships were (53.91%) more likely to have a positive HPV test. The number of partners and the number of sexual encounters, as well as early age at first intercourse, are determining factors in oncogenic HPV infection and, a posteriori, in the lesions associated with it.^{22,23} Exposure to household fumes: the use of incense is predominantly associated with positive HPV testing (47.27%) versus 30%. In the literature, the main risk factors found are sex, age, race, sexual behavior, parity, history of sexually transmitted infection, contraceptive methods and smoking.

CONCLUSION

HPV viral typing in primary screening for cervical cancer is a reality in our daily practice. The prevalence is relatively high. We therefore need to increase recruitment in order to look for other risk factors. We recommend decentralization to peripheral posts and training of health workers and the community for its effective implementation.

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Ethical approval: The study was approved by the Institutional Ethics Committee

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