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Epidemiological and Histopathological Aspect of Precancerous and Cancerous Lesions of the Cervix in the Health District of Commune 5 of Bamako, the CHU of Point "G" and the Gabriel Touré University Hospital of Bamako in Mali

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Abstract

Objective: The aim was to take stock of the screening and treatment of precancerous and cancerous lesions of the cervix in the health district of commune V of Bamako, the "G" point and the Gabriel Touré University Hospital in Bamako, Mali. **Patients and Methods:** This was a descriptive, cross-sectional, analytical study with retrospective and prospective data collection over an 8-year period from January 1, 2010 to December 31, 2017. This was a multi-center study. **Results:** From January 1, 2010 to December 31, 2017, 42,492 women were screened, representing a frequency of 24.30%. The median age of the women screened was 32 years; 25% were under the age of 25. Three-fourth of the women screened was in the 20 - 49 age group. Of the 22,842 women screened, 90.1% of them had a normal col to IVA/IVL. However, 4.1% of cervical positivity had with acetic acid and 5.1% of positivity to Lugol. 0.7% of the women screened clinically had cancerous lesions. Histologically, 96.5% of the women screened had a normal cervix with benign lesions. For pathological histological findings, we noted 2.6% of precancerous lesions and 0.8% of squamous cell carcinomas and 0.1% of adenocarcinoma. **Conclusion:** Improved screening indicators with IVA/IV reduce the rate of

morbidity and mortality from cervical cancer.

Keywords

Epidemiology, Histology, Precancerous and Cancerous Lesions of the Cervix

1. Introduction

Invasive cervical cancer is a slow-moving infectious disease that takes an average of 15 years to develop, from first infection with an oncogenic human papillomavirus (HPV) to various precancerous histological lesions associated with the persistence of infection [1] [2]. It is a largely preventable disease by secondary prevention and is one of the most common cancers among women living in low- and middle-income countries [3] [4].

A significant reduction in cervical cancer incidence and mortality has occurred over the past century in countries capable of implementing effective national screening programs [5] [6]. These programs based on Papanicolaou smears allow the identification and treatment of precancerous lesions of the cervix before they progress to invasive cancer [5] [7] [8]. However, these programs are costly and require robust and well-funded health systems. Few resource-limited countries have initiated or pursued cervical cancer prevention programs based on cytology, and these countries have very high incidence and mortality rates [9] [10].

Fortunately, other strategies for preventing cervical cancer have been studied and widely evaluated in these contexts [11] [12] [13]. Visual inspection methods such as visual inspection after application of acetic acid (IVA) or visual inspection after application of Lugol (IVL) are promising secondary prevention methods for most low-resource countries.

Since 2001, Mali has implemented a cervical cancer screening program based on IVA/IVL. Unfortunately in 2010, screening coverage was less than 15%. In July 2016, the screening program was supported by mass screening campaigns to screen 70% of targets until 2017. And this program has been called "Weekend 70."

2. Objectives

Objective: to take stock of the screening and treatment of precancerous and cancerous lesions of the cervix in the health district of commune V of Bamako, point G and the Gabriel Touré University Hospital in Bamako, Mali.

3. Patients and Methods

This was a descriptive, cross-sectional, analytical study with retrospective and prospective data collection over an 8-year period from January 1, 2010 to December 31, 2017. This was a multi-center study (Reference Health Center of commune 5 of the District of Bamako to screen, Anatomy and Pathological Cytology Department of the University Hospital of Point "G" to examine biopsy

parts and anatomopathological surgical parts and the Gabriel Touré Hospital which served as a center for the management and follow-up of women with precancerous and cancerous lesions in the cervix.

The sampling was exhaustive. The study population consisted of women in genital activity or menopause admitted to the various study centers. Inclusion criteria: All women in genital activity or menopause who were screened for precancerous and cancerous cervix lesions during the study period were included in the study period. Exclusion criteria: Some women were excluded from the study for pregnancy, diaper outcomes, menstruation, virginity, hysterectomy and confirmed cervical cancer followed by treatment.

The data was collected using a fact sheet established for this purpose and previously tested. The sources of data collection were: admission records, screening and treatment records for precancerous cervix lesions, and the operating theatre registry and then patient records. The variables studied were: epidemiological characteristics (age, risk factors, screening coverage), clinical aspects (IVA/IVL screening) and histological aspects.

The data was entered on SPSS 16.0. The statistical analyses were carried out with the SAS 9.4 software. Descriptive statistics were calculated and presented as an average, median and percentage depending on the type of variable. Pearson's Khi-Carré test was used to compare frequencies or prevalence. The Cochran-Armitage test was used to calculate the trend p value. The Odds Ratio (ORa) was used to assess the magnitude of risk with a 95% confidence interval (CI). Logistic regression analysis was used after adjustment to identify risk factors for precancerous and cancerous lesions of the cervix.

4. Results

From January 1, 2010 to December 31, 2017, 42,492 women were screened on a target of 174,777 women, a frequency of 24.30%.

During these years of study, 24,842 women met the inclusion criteria and had a complete record with all the variables useful for the study's needs.

The median age of the women screened was 32 years; 25% were under the age of 25. A similar proportion was over 40 years of age. Three-fourth of the women screened were in the 20 - 49 age group. Women aged 55 and over were the least represented by 5.7%. Figure 1 shows the age range of women screened.

From 2010 to 2012, the annual number of women screened for cervical cancer was less than 1000 women. Between 2013 and 2015, this number almost doubled to 2053 women screened in 2015. However, the highest number of screenings was recorded in 2016 and 2017 with 7197 and 9726 women screened respectively. Figure 2 tells us about the evolution of screening over the years.

Screening coverage was over 35% for the 25 - 49 age group. It was 31.9% and 23.1% among women aged 50 - 54 and 55 - 59, respectively. Screening coverage was less than 15% among people aged 60 and over. Figure 3 summarizes the General Age Screening Coverage for Women Screened for Precancerous and

Cancerous Cervical Lesions.

Among the risk factors studied in our series, variables such as age, diet, marital diet, use of contraceptive methods were measured statistically with a calculation of the Odds ratio.
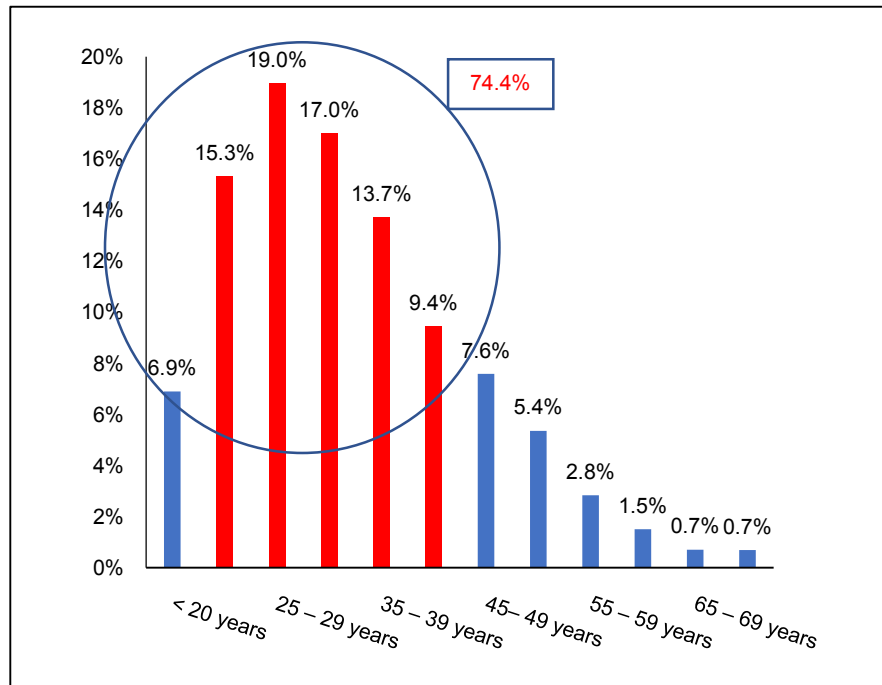

Figure 1. The age group of women screened for precancerous and cancerous lesions of the cervix in the health district of commune 5 of Bamako, the G-spot hospital and the Gabriel Touré Bamako University Hospital in Mali from 2010 to 2017.
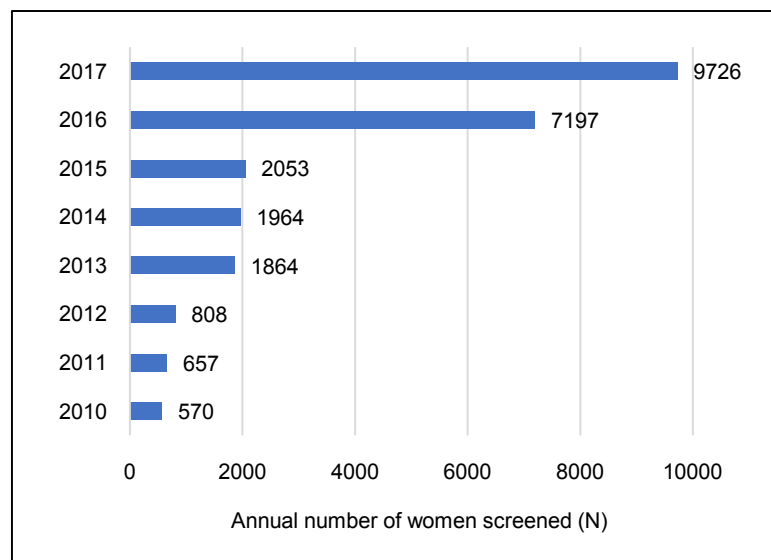

Figure 2. Annual change in the number of women screened for precancerous and cancerous lesions of the cervix in the health district of commune 5 of Bamako, the G-spot hospital and the Gabriel Touré University Hospital in Bamako, Mali, from 2010 to 2017.
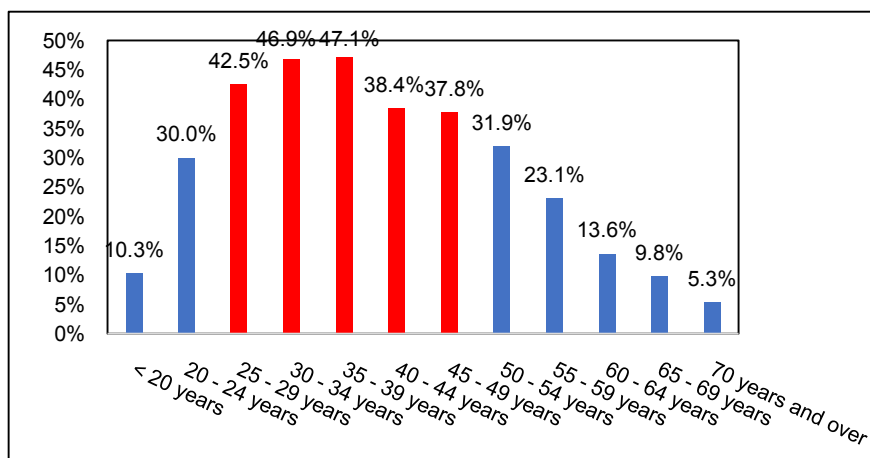
Figure 3. General coverage for age-specific screening of women screened for precancerous and cancerous lesions of the cervix in the health district of commune 5 of Bamako, the CHU of point "G" and the Gabriel Touré University Hospital in Mali from 2010 to 2017.

Of the 22,842 women screened 90.1% of them had a normal col to IVA/IVL. However, 4.1% of cervical positivity with acetic acid and 5.1% of positivity to Lugol. 0.7% of the women screened clinically had cancerous lesions. **Table 1** shows the distribution according to risk factors and the outcome of IVA/IVL screening.

Anatomopathically, various histological lesions have been observed for precancerous lesions, squamous cell carcinoma and adenocarcinomas. Indeed, among the women screened 96.5% had a normal cervix with benign lesions. For those with pathological histological findings, 2.6% had a histology with precancerous lesions and 0.8% had squamous cell carcinomas. A low rate of 0.1% adenocarcinoma was recorded in our series. **Table 2** gives us the result of histology.

5. Discussion

5.1. Epidemiological Aspects

In the literature, the frequency of precancerous lesions is observed more in the 30 - 50 age group and that of cancerous lesions is the age group of 50 and over. This frequency was 24.30% in our series. Numerous studies in different countries have assessed the impact of knowledge on cervical cancer screening, such as the one in Nigeria, which found that half of women surveyed about their screening habits identified lack of knowledge as an important reason why they had not been screened [14]. Women should be more educated about the risk factors associated with cervical cancer, its natural evolution, and the possibilities for screening and treatment. The age range of precancerous lesions ranging from 25 years to 49 years and that of cancer lesions 55 years and older in our study is superimposed on that found by the other authors. Low screening coverage rates in this age group (50 years and older) have also been reported in other studies [15] [16]. The average age of cervical cancer was 50 years.

Table 1. The distribution by risk factors and the outcome of IVA/IVL screening of women screened for precancerous and cancerous cervix lesions in the health district of commune 5 of Bamako, the CHU of point "G" and the Gabriel Touré University Hospital of Bamako in Mali from 2010 to 2017.

Variables measured	Ora	IC 95%	
Age-to-year			
< 20 years	1.00	-	
20 - 29 years	2.45	1.27	4.74
30 - 39 years	5.35	2.78	10.33
40 - 49 years	7.76	3.99	15.10
50 - 59 years	12.09	6.17	23.69
60 - 69 years	20.70	10.27	41.72
70 years and over	34.61	16.30	73.52
Gestity			
Nulligeste	1.00	-	
Primigeste	1.71	1.07	2.73
Paucigeste	1.24	0.79	1.93
Multigeste	1.60	1.03	2.49
Large multigeste	2.14	1.37	3.36
Marital diet			
Monogamy	1.00	-	
Polygamy	1.03	0.89	1.20
Single	0.48	0.38	0.61
Method use Contraceptive			
Yes	0.92	0.79	1.08
No	1.00	-	
Screening Result	**Effectifs**	**Frequency (%)**	
IVA/IVL normal	22,321	90.1	
IVA positif	1107	4.1	
IVL positif	1256	5.1	
Suspicion of neoplasia	164	0.7	
Total	**24,842**	**100**	

Table 2. The results of the histology of women detected with precancerous and cancerous lesions of the cervix in the health district of commune 5 of Bamako, the CHU of point "G" and the Chu Gabriel Touré of Bamako in Mali from 2010 to 2017.

Results of Histology	Effectifs	Frequency (%)
Normal/Benign Lesions	23,986	96.5%
Precancerous injuries	620	2.6%
Squamous cell carcinoma	214	0.8%
Adenocarcinoma	22	0.1%
Total	24,842	**100%**

This relationship is poorly defined in the literature where most of the authors are more interested in the relationship between parity and pre-cancerous and cancerous of the cervix. We looked at the relationship between gestity and the occurrence of precancerous and cancerous lesions. This relationship is poorly defined in the literature where most authors are more interested in the relationship between parity and precancerous and cancerous lesions of the cervix. Thus, in our study, we found a statistically significant link between the number of pregnancies (gestity) and the risk of developing precancerous and cancerous lesions of the cervix. Statistical tests carried out to measure this gestity gave us the following values: an Odds Ratio of 1.60 with a 95% CI of [1.03 - 2.49] multigeste, a Odds Ratio of 1.24 with a 95% CI of [0.79 - 1.93] of paucigeste , a Odds Ratio of 1.71 with a 95% CI of [1.07 - 2.73] of primigeste and a Odds Ratio of 1.00 nulligeste.

Assumptions such as increased hormone levels and altered immune response have been made to explain the increased risk of precancerous or cancerous cervix lesions with pregnancy and childbirth [17]. Assumptions such as increased hormone levels and altered immune response have been made to explain the increased risk of precancerous or cancerous cervix lesions with pregnancy and childbirth [17]. Also, it has been shown that the processing area remains longer on exocol in multiparous women and thus facilitates direct exposure to HPV and potential cofactors [18].

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Our logistic regression analysis shows that age was strongly associated with the risk of precancerous and cancerous cervical lesions. Our logistic regression analysis shows that age was strongly associated with the risk of precancerous and cancerous cervical lesions. The risk of these lesions was increased 34.61 times in women aged 70 and over when compared to women under the age of 20. The risk of these lesions was increased 34.61 times in women aged 70 and over when compared to women under the age of 20. In addition, large multigesity was also

associated with an increased risk of precancerous and cancerous lesions of the cervix compared to nulligest (ORa - 2.14; In addition, large multigesity was also associated with an increased risk of precancerous and cancerous lesions of the cervix compared to nulligest (ORa - 2.14; 95% CI: 1.37 - 3.36). 95% CI: 1.37 - 3.36). It is clear that age is a risk factor for precancerous and cancerous lesions of the cervix. It is clear that age is a risk factor for precancerous and cancerous lesions of the cervix. In their study, Vinh Hung V *et al.* [19] reported that the average age of onset of epidermoid cancer ranges from 48 years to 57.8 years.

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This study found that polygamy increases the risk of cervical lesions by 1.03 and contraception increases the risk by 0.92. This study found that polygamy increases the risk of cervical lesions by 1.03 and contraception increases the risk by 0.92. This discrepancy between our results and those of the literature could be related to a bias of social desirability. This discrepancy between our results and those of the literature could be related to a bias of social desirability. Indeed, marital status remains a sensitive subject especially among single women and women living in a polygamy regime. Indeed, marital status remains a sensitive subject especially among single women and women living in a polygamy regime. It may therefore be that this variable has been misjudged since erroneous information can be reported by these women.

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5.2. Clinical and Histopathological Aspects

The prevalence of cervical abnormalities detected at IVA was 4.5% and those detected with IVL was 5.1%. Anatomopathically, various histological lesions have been observed for precancerous lesions, squamous cell carcinoma and adenocarcinomas. Indeed, among the women screened 96.5% had a normal cervix with benign lesions. For those with precancerous lesions confirmed by histology, our series reports 2.6% of precancerous lesions and 0.8% of squamous cell carcinomas. A low rate of 0.1% adenocarcinoma was recorded in our series. In Burkina Faso, Millogo FT *et al.* [20] reported a prevalence of cervical abnormalities of 4.2%. In addition, the prevalence of precancerous lesions confirmed by histology was 2.5% and that of cancerous lesions was 0.9%. This prevalence was lower than in Nigeria, where the prevalence of precancerous lesions was 4.8% [21]. The difference in prevalence observed in these different countries is probably due to cervical cancer screening policies associated with other preventive measures in these developed countries.

From 2010 to 2012, the annual number of women screened for cervical cancer was less than 1000 women. Between 2013 and 2015, this number almost doubled to 2053 women screened in 2015. However, the highest number of screenings was recorded in 2016 and 2017 with 7197 and 9726 women screened respectively.

Figure 2 tells us about the evolution of screening over the years. Improving screening indicators with IVA/IVL that do not require significant resources is a promising pathway in Africa that it can hope to reduce the morbidity and mortality rate from cervical cancer. One way to improve screening indicators with IVA/IVL is to organize mass screening campaigns. In our study, mass screening campaigns called "Week End 70" increased gradually from 2010 to 2012.

The big challenge in improving screening indicators with IVA/IVL is to train providers in screening and to make screening an activity of routine consultations.

6. Conclusion

Improving screening indicators with IVA/IVL that does not require large resources is a promising avenue in Africa on which it can hope for the rate of morbidity and mortality from cervical cancer.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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