

Precancerous and Cancerous Lesions of the Cervix in African Environments (Healthdistrict of Thecommune 5 of Bamako in Mali)

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DOI: [10.36348/sijog.2021.v04i09.003](https://doi.org/10.36348/sijog.2021.v04i09.003)

| Received: 13.08.2021 | Accepted: 16.09.2021 | Published: 18.09.2021

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Abstract

Objective: 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 in Mali. **Patients and Methods:** This was a descriptive, cross-sectional, analytical study with retrospective and prospective data collection over a period of 08 years from 1 January 2010 to 31 December 2017. **Results:** From January 1, 2010 to December 31, 2017, 42492 women were screened on a target of 174777 women, a frequency of 24.30%. The median age of women screened was 32 years; 25% were under 25 years of age. A similar proportion were over the age of 40. 3/4 of the women screened belonged to the age group of 20 to 49 years. Women aged 55 and over were the least represented by 5.7%. Screening coverage was over 35% among the 25-49 age groups. It was 31.9% and 23.1% among women aged 50 – 54 and 55 – 59 respectively. Screening coverage was less than 15% among 60-year-olds and older. Of the 22842 women screened, 90.1% had a normal cervix at IVA/IVL. However 4.1% cervix positivity to acetic acid and 5.1% positivity to Lugol. 0.7% of the women screened had clinically cancerous lesions. At the anatomo-pathological level, various histological lesions have been observed with regard to 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 results, 2.6% of them had histology with precancerous lesions and 0.8% had squamous cell carcinomas. A low rate of 0.1% of adenocarcinoma was recorded in our series. **Conclusion:** The improvement of screening indicators with IVA/IVL which does not require large resources is a promising avenue in Africa on which, it can hope for the rate of morbidity and mortality by cervical cancer.

Keywords: Epidemiology, histology, precancerous lesions and cervical cancer.

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INTRODUCTION

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

A considerable reduction in cervical cancer incidence and mortality has occurred over the past century in countries capable of establishing effective national screening programmes [5, 6]. These smear-based programs enable the identification and treatment of precancerous cervical lesions before they progress to invasive cancer [5, 7, 9]. However, these programs are expensive and require robust and well-funded health systems. Few resource-limited countries have initiated or continued cytology-based cervical cancer prevention programs, and these countries experience very high incidence and mortality rates [10, 11].

Fortunately, other cervical cancer prevention strategies have been studied and widely evaluated in these settings [8, 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 methods of secondary prevention for most low-resource countries [8, 14, 15].

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

OBJECTIVE

Objective: 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, Mali.

PATIENTS AND METHODS

It was a descriptive, cross-sectional, analytical study with retrospective and prospective data collection over a period of 08 years from 1 January 2010 to 31 December 2017. Sampling was extensive. The study population consisted of women with genital activity or menopause admitted to the various study centers. Women with genital activity or menopause who were screened for precancerous and cancerous cervical lesions during the study period were included in the study. Some women were excluded from the study for reasons of pregnancy, following childbirth, menstruation, virginity, hysterectomy and confirmed cervical cancer and follow-up treatment.

The data were collected using a sheet drawn up for this purpose and previously tested. The sources of data collection were: admission record, screening and treatment record for precancerous cervical lesions, and the operating room registry and patient record. The variables studied were: epidemiological characteristics (age, risk factors, screening coverage), clinical aspects (IVA/IVL screening) and histological aspects.

Data entry was performed on spss 16.0 software. The statistical analyses were carried out with SAS 9.4 software. Descriptive statistics were calculated and presented as average, median and percentage by type of variable. Pearson's Chi-Square test was used to compare frequencies or prevalences. 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 cervical lesions.

RESULTS

From January [1], 2010 to December 31, 2017, 42492 women were screened on a target of 174777 women, a frequency of 24.30%.

During these study years, 24,842 women met the inclusion criteria and had a complete file containing all the variables relevant to the study.

The median age of women screened was 32 years; 25% were under the age of 25. A similar proportion were over the age of 40. 3/4 of the women screened belonged to the age group of 20 to 49 years. Women aged 55 and over were the least represented by 5.7%. Figure 1 shows the age range of women screened.

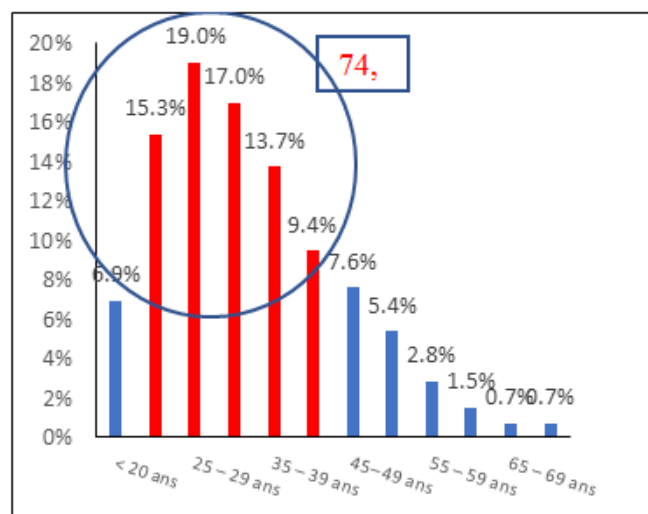


Fig-1: The age range of women screened for precancerous and cancerous lesions of the cervix in the health district of Commune 5 of Bamako, Mali from 2010 to 2017.

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 during the years 2016 and 2017 with 7197 and 9726 women screened respectively. Figure 2 provides information on the evolution of screening over the years.

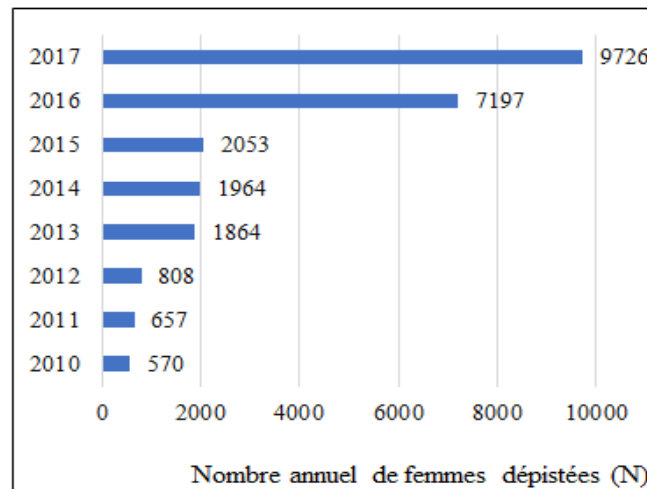


Fig-2: Annual evolution of the number of women screened for precancerous and cancerous lesions of the cervix in the health district of commune 5 of Bamako in Mali from 2010 to 2017.

Screening coverage was over 35% among the 25-49 age groups. It was 31.9% and 23.1% among women aged 50 – 54 and 55 – 59 respectively. Screening coverage was less than 15% among 60-year-

olds and older. Figure 3 summarizes the general screening coverage by age group of women screened for precancerous and cancerous lesions of the cervix.

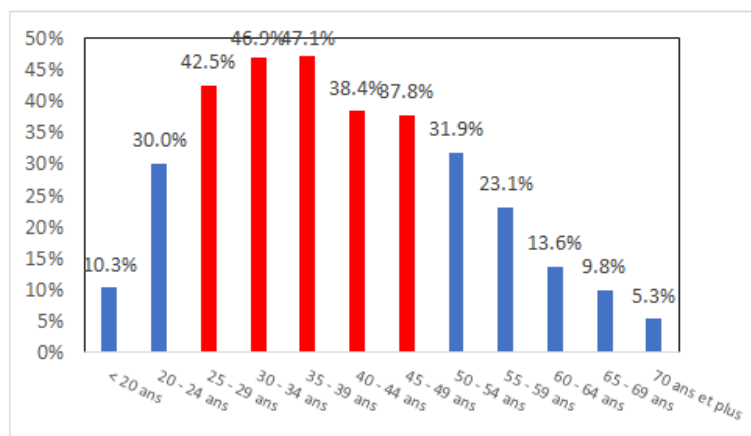


Fig-3: General coverage in screening by age group of women screened for precancerous and cancerous lesions of the cervix in the health district of commune 5 of Bamako in Mali from 2010 to 2017.

Of the 22842 women screened, 90.1% had a normal cervix at IVA/IVL. However 4.1% cervix positivity to acetic acid and 5.1% positivity to Lugol.

0.7% of the women screened had clinically cancerous lesions. Table 1 show the result of the screening.

Table-1: The result of IVA/IVL screening of women screened for precancerous and cancerous lesions of the cervix in the health district of commune 5 of Bamako in Mali from 2010 to 2017.

Screening result	Staff	Frequency (%)
Normal IVA/IVL	22321	90,1
Positive IVA	1107	4,1
Positive IVL	1256	5,1
Suspected neoplasia	164	0,7
Total	24842	100

At the anatomo-pathological level, various histological lesions have been observed with regard to 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 results, 2.6% of them had histology with precancerous lesions and 0.8% had squamous cell carcinomas. A low rate of 0.1% of adenocarcinoma was recorded in our series. Table 2 gives us the result of histology.

Table-2: the results of the histology of women screened for precancerous and cancerous lesions of the cervix in the health district of commune 5 of Bamako in Mali from 2010 to 2017.

Results of histology	Staff	Frequency (%)
Normal/Benign Lesions	23986	96,5%
Precancerous lesions	620	2,6%
Squamous cell carcinoma	214	0,8%
Adenocarcinoma	22	0,1%
Total	24842	100%

Among the risk factors studied in our series, variables such as age, gestationalism, marital regime, use of contraceptive methods were measured statistically

with a calculation of the Odds ratio. Table 3 shows the distribution by risk factors.

Table-3: The distribution of women screened according to the risk factors of women screened for precancerous and cancerous lesions of the cervix in the health district of commune 5 of Bamako in Mali from 2010 to 2017

Variables measured	Ora	95% CI	
Age in 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
Gestures			
Nulligeste	1,00	-	
Primigeste	1,71	1,07	2,73
Paucigeste	1,24	0,79	1,93
Multigestural	1,60	1,03	2,49
Great multi-gesture	2,14	1,37	3,36
Matrimonial property regime			
Monogamy	1,00	-	
Polygamy	1,03	0,89	1,20
Celibacy	0,48	0,38	0,61
Using method Contraceptive			
Yes	0,92	0,79	1,08
No	1,00	-	

DISCUSSION

Epidemiological aspects

In the literature, the frequency of precancerous lesions are observed more in the 30-50 age group and that of cancerous lesions is the age group of 50 years and older[18]. 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 the women asked about their screening habit cited lack of knowledge as an important reason why they had not been screened [18]. Should women be made more

aware of the risk factors associated with cervical cancer, its natural course and the possibilities of screening and treatment? The age range of precancerous lesions ranging from 25 to 49 years and that of cancerous lesions from 55 years and over in our study is superimposed on that found by the other authors. Rates of low screening coverage in this age group (50 years and older) have also been reported in other studies [16-17]. The average age of cervical cancer was 50 years.

This relationship is poorly defined in the literature where most authors are more interested in the relationship between parity and pre-cancerous and

cancerous lesions of the cervix. We were interested in the relationship between gestationalism 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 (gestural gestures) and the risk of occurrence of precancerous and cancerous lesions of the cervix. Statistical tests performed to measure this gesture gave us the following values: an Odds Ratio of 1.60 with a 95% CI of [1.03 -2.49] of multigesta, an Odds Ratio of 1.24 with a 95% CI of [0.79 -1.93] of paucigest, an Odds Ratio of 1.71 with a 95% CI of [1.07 -2.73] of primigeste and an Odds Ratio of 1.00 of nulligest.

Hypotheses such as increased hormone levels and impaired immune response have been made to explain the increased risk of precancerous or cancerous cervical lesions with pregnancy and childbirth [22]. Also, it has been shown that the transformation zone remained longer on the exocervix in multiparous women and thus facilitated direct exposure to HPV and potential cofactors [23].

Our logistic regression analysis shows that age was strongly associated with the risk of precancerous and cancerous cervical lesions. The risk of these lesions increased 34.61 times in women aged 70 and over when compared to women under 20. In addition, high multigesturality was also associated with increased risk of precancerous and cancerous lesions of the cervix compared to nulligest (ORa = 2.14; 95% CI: 1.37 – 3.36). 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*. [21] reported that the average age of onset of squamous cell cancer ranges from 48 years to 57.8 years.

This study shows 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. Indeed, marital status remains a sensitive subject especially among single women and women living in a polygamy regime. It could therefore be that this variable was poorly measured since erroneous information can be reported by these women.

Clinical and histopathological aspects

The prevalence of cervical abnormalities detected at IVA was 4.5% and those detected at IVL was 5.1%. At the anatomic-pathological level, various histological lesions have been observed with regard to precancerous lesions, squamous cell carcinoma and adenocarcinomas. Indeed, among the women screened 96.5% had a normal cervix with benign lesions. For

those who had precancerous lesions confirmed by histology. Our series reports 2.6% of precancerous species and 0.8% of squamous cell carcinomas. A low rate of 0.1% of adenocarcinoma was recorded in our series. In Burkina Faso, Millogo FT *et al*. [19] 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 0.9%. This prevalence was lower compared to that reported in Nigeria where the prevalence of precancerous lesions was 4.8% [20]. The difference in prevalence observed in these different countries is probably due to cervical cancer screening policies combined with other preventive measures in force 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 during the years 2016 and 2017 with 7197 and 9726 women screened respectively. Figure 2 provides information on the evolution of screening over the years. Improving screening indicators with IVA/IVL that does not require significant resources is a promising path in Africa on which it can hope to reduce the morbidity and mortality rate due to 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" allowed to increase gradually from 2010 to 2012.

CONCLUSION

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

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