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# Screening for Precancerous Lesions of the Cervix by IVA/IVL Visual Tests at the Training Center for the Prevention of Gynecological Cancer in Conakry (Guinea)

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**Abstract:** *Introduction:* The prevention of cervical cancer involves screening for precancerous lesions of the cervix using IVA/IVL visual tests, an approach to be popularized in countries with limited resources. The objective of this study was to contribute to the study of screening for precancerous conditions of the cervix at the center. *Methods:* it was a descriptive retrospective study lasting three (3) years (2016-2018), which involved all patients with precancerous lesions of the cervix detected by the IVA/IVL test coupled with histology at the Francophone Regional Training Center for the Prevention of Gynecological Cancer in Donka. Results: for 2784 patients seen at the center, 207 tested positive for VIA/IVL, including 153 cases of precancerous and/or cancerous lesions (153/207) for an overall frequency of 73.9%. The most affected age group was 35-54 years. The average age was  $44.04 \pm 11.65$  years, with extremes of 21 and 76 years. Women most often resided in Conakry (71.1%), not attending school (66.7%), married (76.8%), premenopausal (59.5%), multiparous (72%) and had used at least one contraceptive method (57.5%). Atypical grade 1 transformation was most encountered at colposcopy (50.7%). Precancerous lesions were more common with 40.6% of cases, histology reported 33.3% of invasive cancer. IVA/IVL tests were 74% sensitive and 92% specific. *Conclusion:* IVA/IVL, is a very useful evaluation method in the study and diagnosis of CIN and invasive cancer. Histology remains the means of confirming the diagnosis.

**Keywords:** Screening, Precancerous Lesions, Cervix

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## 1. Introduction

IVA/IVL screening for cervical cancer is an approach that visually inspects the cervix after applying 3–5% acetic acid and lugol, to detect abnormalities suggestive of a precancerous or cancerous lesion. It is a very useful evaluation method for the study and diagnosis of CIN and subclinical invasive cancer [1].

Cervical cancer is in most cases a slow-growing infectious disease [2]. It takes an average of 10 to 15 years to develop after a persistent sexually transmitted infection due to oncogenic human papillomavirus (HPV). It is therefore a

preventable cancer [3].

The World Health Organization (WHO) estimates that in Africa, HPV infections cause about 68,000 cases of cervical cancer each year and that cervical cancer accounts for 22% of all female cancers [4]. In Guinea, it is the first cancer of women. In a preliminary study from the National Cancer Registry, cervical cancer accounts for 50% of cancers recorded [5].

Cervical cancer is a cancer model preceded by a series of intraepithelial changes resulting in numerous cytonuclear atypia and a disorganization of the architecture of the squamous epithelium of the cervix, grouped under the term cervical dysplasia or cervical intraepithelial neoplasia (CIN)

[6].

The development and progression of these precancerous lesions to invasive cancer is slow, justifying prevention through screening. Thus, the goal of treatment is based on the primary prevention of sexually transmitted infections, through vaccination that would protect against human papillomavirus (HPV) infections with a high oncogenic risk.

Other forms of early detection include Pap smear, IVA/IVL, and viral typing [7, 8]. The diagnosis of dysplasia or microinvasive cervical cancer is confirmed by histology on a biopsy sample of the cervix after a positive or suspected VIA/IVL [9].

The optimization of the practice of IVA/IVL in the application of the cervical cancer prevention strategy at the Centre through both a qualitative and quantitative approach motivated the choice of this topic.

The objective of this study was to contribute to the study of screening for precancerous lesions of the cervix by visual tests with IVA/IVL and histological diagnosis at the Regional Francophone Training Center for the Prevention of Gynecological Cancer in Conakry, (Guinea) from 2016 to 2018.

## 2. Methods

This was a descriptive study with retrospective recruitment that extended over a period of three (3) years from 01 January 2016 to 31 December 2018 at the Regional Francophone Training Center for the Prevention of Gynecological Cancer in Donka.

The study population consisted of all the records of women who consulted for cervical cancer screening. Included in our study were the records of patients who tested positive for IVA/IVL, in whom a biopsy was performed during the study period, We conducted a comprehensive recruitment of all records meeting our inclusion criterion. The variables studied were related to sociodemographic characteristics, contraceptive use, place of colposcopy in screening, type of precancerous lesions, IVA/IVL test performance and histological lesions found. We conducted a descriptive analysis of our variables. The data were entered on Epi data version 3.1 and then exported to the SPSS software (version 22) which allowed us to calculate the mean, mode, standard deviation, sensitivity, specificity.

Ethical considerations: confidentiality and anonymity were respected.

## 3. Results

The study collected 207 records of women who tested positive for VIA/IVL with a histological result at the Centre, during the period from January 2016 to December 2018.

Frequency of precancerous and cancerous lesions of the cervix: Out of 207 women who tested positive for VIA/IVL, 153 had precancerous or cancerous lesions, a frequency of 73.9%.

**Table 1.** Sociodemographic Characteristics of Patients.

	Number	Percentage
Age		
15 – 34 years old	47	22.7
35 – 54 years old	120	58.0
55 – 74 years old	38	18.3
75 – 95 years old	02	1.0
Profession		
Employee	15	7.2
Pupils/students	09	4.3
Liberal functions	78	37.7
Housewives	105	50.8
Educational attainment		
Out of school	138	66.7
Primary	50	24.1
Secondary	08	3.9
Upper	11	5.3
Total	207	100

The 35-54 age group was the most represented with 58% of cases. The average age was 44.04 ±11.65 years, with extremes of 21 and 76 years. Housewives accounted for more than half of the workforce (50.8%). Out-of-school women accounted for 66.7% of cases.

**Table 2.** Contraceptive Use.

Contraception	Number	Percentage
Yes	119	57.5
No	88	42.5
Total	207	100.0

In our series, 57.5% (119) of our patients used contraception.

**Table 3.** Parity.

Parity	Number	Percentage
Nulliparous	15	7.2
Primiparous	12	5.8
Pauciparous	31	15.0
Multiparous	149	72.0
Total	207	100.0

Multiparous were more numerous, i. e. 72% of cases

**Table 4.** Place of colposcopy: according to the classification of the French Society of Colposcopy and Cervic-Uterine Pathology (SFCPCU).

Colposcopy	Number	Percentage
Normal	19	9.2
Atypical grade processing1	105	50.7
Atypical grade processing2	83	40.1
Total	207	100

**Table 5.** Histological Lesions Group.

Histological result	Number	Percentage
Cervicitis	46	22.2
Infection HPV	8	3.8
CIN1	32	15.5
CIN2	29	14.0
CIN3	23	11.1
Squamous cell carcinoma	43	20.8
Adenocarcinoma	26	12.6
Total	207	100.0
Group of histological lesions		
Benign	54	26.1
Dysplasias	84	40.6

Histological result	Number	Percentage
Invasive cancers	69	33.3
Total	207	100.0

Cervicitis was the most common histological type (22.3%). There were 46 cases of cervicitis and 8 cases of HPV infection. Precancerous lesions were more common with 40.6% and histology reported 33.3% invasive cancer.

*Table 6. Type of Precancerous Lesions.*

Precancerous lesions	Number	Percentage
Low-grade intraepithelial lesions (CIN1)	32	15.5
High-grade intraepithelial lesions (CIN2-3)	52	84.5
Total	84	100.0

High-grade intraepithelial lesions were more represented with 52 cases or 84.5%.

*Table 7. Type of Cancer Found.*

Cancerous lesions	Number	Percentage
Squamous cell carcinoma	43	62.3
Adenocarcinoma	26	37.7
Total	69	100.0

Squamous cell carcinoma is the most represented type of cancerous lesion with 43 cases or 62.3%.

*Table 8. IVA/IVL Test Performance.*

	IVA/IVL +	IVA/IVL-	Total
Sick	153	54	207
Not sick	215	2363	2577
Total	368	2416	2784

Sensitivity  $(153/207*100) = 74\%$  Specificity  $(2363/2577*100) = 92\%$

In our study, we found IVA/IVL visual test sensitivity at 74% and specificity at 92%.

## 4. Discussion

The frequency rate of 73.9% of precancerous or cancerous lesions of the cervix found in our study is comparable to that of Ndamba Engbang J P and cervix [10] in Cameroon in 2015 which reported a frequency of 72.3%. It is different from that of Keita M et al [11] in Mali in 2020 which found a frequency of 38.1%;

The high incidence rates of cervical cancer in developing countries are explained by multiple challenges, including the lack of effective screening and care policies, strategies and programmes, but also a lack of recent and comprehensive data due to the weakness of health systems in general and national health information systems.

When cervical cancer screening is well organized and women are tested and treated immediately (for those with eligible pre-cancerous lesions), at regular intervals, the incidence of cervical cancer can be reduced.

The most affected age group in our was 35 to 54 years or 58%. More than half of the women were under the age of 50 (table 1).

The average age of patients screened was  $44.04 \pm 11.65$

years, with extremes of 21 and 76 years. This notion of average age is variously reported in the literature: Allam M [12] in Ireland in 2005 reported to Royal Alexandra Hospital, an average age of  $33 \pm 8$  years; Keita M et al [11] in Mali in 2020, found an average age of  $38.37 \pm 11.94$  years, Mpiga É et al [13] in Gabon in 2015 reported an average age of  $39.9 \pm 10.5$  years, Yazghich I. et al [14] in Morocco in 2018 who found an average age of  $40.7 \pm 12.77$  years. These studies report that precancerous and cancerous lesions of the cervix occur most often in women under 50 years of age.

Out-of-school women accounted for 138 or 66.7 per cent (table 1). Our results are contradictory to those of Kouam L in Cameroon which reports only 14.7% of women out of school [15].

In our study, 57.5% (119) of patients had used at least one method of contraception (table 2).

Our result is close to that of Mpiga É et al [13] in Gabon in 2015 which reported 48.9% of patients had already used contraception.

Long-term use (more than 5 years) of estrogen-progestogen by women with persistent HPV infection is a contributing factor to the development of cervical cancer.

Multiparous cases accounted for 101 cases or 48.8% (table 3). Studies corroborate this positive relationship between the number of pregnancies, childbirth and cervical cancer. The physiological reason for this association is not elucidated; Hormonal factors related to pregnancy or neck trauma related to childbirth are possible explanations [16].

Our result is comparable to those of Mpiga É et al [13] in Gabon in 2015 which counted 45% of women with a parity of 4 and more. Caroline Coibion et al [17] in 2016, cited multiparity as a risk factor for cervical cancer in their study and this cancer is six times higher in multiparous women than in pauciparous women. This also confirms that multiparity is a major risk factor in the genesis of cervical cancer.

Colposcopy was performed for all our patients (table 4). The results were expressed according to the terminology of the French Society of Colposcopy and Cervico-Vaginal Pathology: atypical grade 1 transformation (TAG1), or grade 2 atypical transformation (TAG2).

In Guinea Diallo M et al [18] in 2017, found in their study colposcopic results different from ours: normal and satisfactory colposcopy in 112 cases either (55.7%), an atypical grade 1 transformation in 22 cases or (10.9%) and an atypical grade 2 transformation in 36 cases or (17.9%).

Our results are also different from those of ADISSO. S et al. [19] in Benin in 2014 who found the following colposcopic results: an atypical grade 1 transformation (12 cases or 12.1%), an atypical grade 2 transformation (9 cases or 9.1%). Mpiga É et al [13] in 2015 in Gabon, report 18 cases (5.8%) of grade 1 atypical transformations (TAG1) and 8 cases (2.6%) of grade 2 atypical transformations (TAG2). Traore M. et al [20] in 2017, in Burkina Faso found during their study 7 cases of TAG1 or 5.4% and 10 cases of TAG2 or 7.7%.

Precancerous lesions were more frequent with 84 cases or

40.6% distributed: 32 cases of CIN1 or 15.5%; 29 cases of CIN2 or 14%; 23 cases of CIN3 or 11.1% (table 5). High-grade intraepithelial lesions (LIEHG) were more represented with 52 cases or 84.5%. There were 32 or 15.5% of low-grade intraepithelial lesions (table 6). Diallo M *et al* [18] in Guinea in 2017, found the following histological results: 60 cases of CIN1 either (29.8%), 70 cases of CIN2 or (34.9%), 37 cases of CIN3 or (18.4%). Allam M. *et al.* [12] in 2005 in Ireland, reported 86.4% of high-grade lesions (CIN2-3) and 13.6% of low-grade lesions (CIN1). Traoré M. *et al* [20] in 2017 in Burkina Faso, found 35 cases of CIN1 or 45.5%. 10 cases of CIN2 or 13% and 15 cases of CIN3 or 19.5% during their study. Keita M *et al* [11] in 2020 in Mali, reported 13.3% of high-grade intraepithelial lesion. These results confirm the interest of continuing screening for cervical dysplasia by offering the possibility of performing a histological study (colposcopy) or being able to offer treatment (cryotherapy or conization) in case of high-grade lesions.

Our histological confirmation reported 69 cases of invasive cancer or 33.3%, 43 cases of squamous cell carcinoma or 20.8% and 26 cases of adenocarcinoma or 12.6% (table 7).

Our results are different from those of ADISSO. S *et al.* [18] in Benin in 2014 who found 10 cancerous lesions or 8.9% during their study.

This further confirms that squamous cell carcinoma is the most common histological type of invasive cervical cancer.

## 5. Conclusion

Precancerous and cancerous lesions of the cervix are very common. They occur most often in young and multiparous women, in full genital activity. Several factors contribute to the occurrence of dysplastic or cancerous lesions of the cervix. IVA/IVL is a very useful evaluation method in the study and diagnosis of CIN and subclinical invasive cancer. Histology remains the means of confirming the diagnosis of precancerous and cancerous conditions of the cervix.

## Conflicts of Interest

The authors do not declare any conflict of interest.

## Authors' Contributions

All authors participated in the study, read and approved the final version of the manuscript.

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