

# Study Of Cervical Cancers In Mauritius Over A Twelve Years Period (1989-2000) And Role Of Cervical Screening

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## Citation

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## Abstract

Cervical cancer is among the most dangerous diseases affecting women worldwide. In Mauritius, it is the second most common cancer in women after breast cancer. During the 1989-1992 period, the incidence of cancer cervix was 20 % of all cancers in females and dropped to 12% during the 1997-2000 period. Over this twelve year period (1989-2000), the mean age of patients with cervical cancer was 56 years. Squamous cell carcinoma was the most common histologic type and the incidence was greatest among the native Mauritian population. A cervical cancer screening program started in Mauritius in the year 2001 and is ongoing.

## INTRODUCTION

Cancer of the uterine cervix is one of the most common malignancies worldwide after breast cancer. The average annual incidence of cervical cancer varies widely per geographical area. Cervical cancer is the second most common neoplastic disease affecting women, with a combined worldwide incidence of almost half a million new cases annually, second only to breast cancer.<sup>1</sup>

Epidemiologic data have long implicated a sexually transmitted agent, based specifically on the risk factors for cervical cancer, which include early age at first intercourse, multiple sexual partners, and a male partner with multiple previous sexual partners. Potential risk factors that remain poorly understood include oral contraceptive use, cigarette smoking, parity, familial history, associated genital infections, and lack of circumcision in the male sexual partner.<sup>2</sup>

Human papilloma virus is currently considered an important factor in cervical oncogenesis. It is also suspected to be an oncogenic agent in a variety of other squamous tumors or proliferative lesions of skin and mucous membranes.<sup>3</sup>

The reason that Papanicolaou smear screening is so effective in preventing cervical cancer is that the majority of cancers are preceded by a pre-cancerous lesion. This lesion may exist in the non-invasive stage for as long as 20 years and shed abnormal cells that can be detected on cytological examination.<sup>4</sup>

Although the introduction of screening tests to detect cervical cancer and its precursor lesions has reduced overall cervical cancer rates in the developed world, the approach was largely unsuccessful for developing countries, primarily due to lack of appropriate infrastructure and high costs.<sup>5</sup>

## METHODOLOGY

Data were collected from the reports of the national cancer registry of Mauritius over a period of 12 years, from 1989 to 2000. The total numbers of reported cancer cases were noted, with special emphasis on cancers of the female genital tract. To analyze the trends, the prevalence of cervical cancer and the ethnic and age distribution was noted in periods of 4 and 10 years, respectively. Information was also gathered from the records of the Ministry of Health & Quality of life and from the national cervical screening program.

## RESULTS

A total of 12,549 cases of cancer were reported over 12 years in Mauritius. Out of these, 2039 cases were of the female genital tract. Cervical cancer cases were found to be 1179 (58%). In the period from 1989 to 1992, 391 cases of cervical cancers were reported out of a total of 634 cases of female genital tract tumors (62%). In the period 1993 to 1996, 464 cases of cervical cancers were reported out of a total of 723 cases of female genital tract tumors (64%). And in the period 1997-2000, 324 cases were seen out of 682 female genital tumors (47.5%) (Table 1).

**Figure 1**

Table 1: Yearly distribution of cases of female genital tumors and cervical cancers

Number of Cases	1989-1992	1993-1996	1997-2000	Total
Female genital tumors	634	723	682	2039
Cervical cancers	391	464	324	1179
Percent cervical cancers	61.7%	64%	47.5%	58%

**Figure 2**

Table 2: Age distribution per intervals of ten years, starting from 20 years of age to 80 and above.

Age Groups	Number of cases of cervical cancer	Percentage
20-29	19	1.6%
30-39	103	8.7%
40-49	259	21.9%
50-59	296	25.1%
60-69	254	21.7%
70-79	180	13.6%
80&above	64	5.4%
Unknown	24	2.0%
Total	1179	100%

The highest prevalence (296 cases out of 1179) was between the ages of 50 and 59 years. Ethnic distribution during these periods showed a greater prevalence in the native Mauritian population, followed by Hindus and Muslims, and was least prevalent among the Chinese. Squamous cell carcinoma was the most common histologic type.

## DISCUSSION

Cervical cancer is the most common type of malignancy in women in most developing countries, and is the second most common form of cancer in the world.<sup>1</sup> It is a significant challenge and a potential threat for society.

In India, cervical cancer accounts for 20-50% of all cancers and 80-85% of female genital cancers.<sup>6,7</sup> A similar situation exists in Southeast Asian countries, where the percentage of cervical cancer ranges from 25.4 % to 45.4 % of all cancers.<sup>8</sup> In the United to States, it ranks tenth. The 70% reduction in cervical cancer deaths in the United States in the last 30 years is largely the result of effective screening by Papanicolaou (PAP smear), which identifies the disease in a pre-invasive state.<sup>9</sup> Treatment for pre-invasive lesions is effective.<sup>10</sup> Similarly, in high and middle income countries, cervical cancer morbidity and mortality have substantially decreased during the last 50 years mainly because of successful implementation of screening with PAP cytology. In many low income countries PAP cytology screening is yet to be effectively implemented or has failed to reduce cervical cancer rates to an appreciable extent.<sup>11</sup>

In Mauritius the highest percentage of cervical cancers

among all the cancers of female genital tract were seen in the 1993-1996 period and amounted to 64%. In the earlier study, i.e. in the 1989-1992 period, they amounted to 61.7%, and were only 47.5% in the 1997-2000 period. During the 1989-1992 period, cancers of the cervix were about 20% of all the cancers in females and were down to 12 % in the 1997-2000 period.

This shows that the incidence of cervical cancer is lower than other countries. Yet being the second most common cancer in females, it does remain a cause of concern and cannot be ignored. The highest incidence was seen in women between 50-60 years (25%). Ethnic distribution showed a continued rise among the native Mauritian population, and the most common histologic type was squamous cell carcinoma.

An abnormal PAP smear should be considered a 'red flag', suggestive of possible neoplasia and thus requiring further investigations like colposcopy and biopsy.<sup>9</sup> Early detection and screening for cancer should be a top priority in the national cancer control programs worldwide. Even in countries, which have achieved a considerable reduction in the incidence of cervical cancer, and an improvement in mortality rates, continued screening must take place.

In Mauritius there have been facilities for PAP smear since the early eighties in an unplanned pattern. Cervical screening slowly became more popular as women became more aware of the disease. Cervical screening was started initially in the year 1999-2000 on a pilot basis, when several regions of Mauritius and Rodrigues were targeted. In the year 2001, a mass screening program for cervical cancer was implemented in the Republic of Mauritius. The targeted ages were 35 to 60 years over a period of 5 years. The main objectives were to create awareness of the importance of cervical screening for cancer, to give appropriate counseling and to refer unfavorable cases to specialized units for further management and treatment. The program is ongoing and approximately 43,985 women have been screened so far, out of which 1477 (3.36%) were positive for pre-cancerous and borderline changes.

Unlike many other developing countries, Mauritius has been adopting screening easily and has motivated women to undergo early detection and prevention of cervical cancer. Cervical screening is a high priority among the various other health promotion programs. The technical staff and pathologists are adequately trained and there is no lack of

back up facilities in terms of referral, follow up and treatment. With the Caravane de santé (mobile unit) going to different regions of Mauritius for screening, the facilities and accessibility is not limited to just a fortunate few. Patients with abnormal Pap's smears are referred for definitive treatment to regional hospitals where they are investigated further by colposcopy and biopsy.

Although the development of cervical cancer is due to many factors, high risk human papilloma virus has been associated with cervical cancer in Mauritius. In a study on a cohort of 65 patients with cervical cancer, the prevalence of HPV 18 was found to be about 32%<sup>12</sup>. Further research in this field is required to detect the other possible etiologic sub-types of HPV in Mauritian women.

In Mauritius approximately 80 new cases of cervical cancer were diagnosed in 2000-2001 and some 50 annual deaths due to cervical cancer were registered. For the period 2001-2002, according to latest figures published by the National Cancer registry, some 1500 new cases of cancer of all sites and types in both males and females were diagnosed, and some 900 annual deaths due to cancer have been registered.

Just after initiation of a mass screening program, it is expected that incidence rates will go up, followed by mortality rate, for a few years. However, if the program is successful, incidence and mortality rates would tend to have a downward trend after that initial period. This is a common observation in all countries embarking on population based screening.

## CONCLUSION

As cervical cancer still remains a major cause of cancer death in women worldwide and in Mauritius, its declining rate should not make the health authorities complacent. Cervical screening should be continued with proper quality

controls and clinical audit to evaluate its effectiveness. Women should be continuously made aware of the risk factors as well as effectiveness of screening in decreasing the morbidity and mortality associated with cervical cancer. Further research is required in defining the possible etiologic agents responsible for the development of cervical cancer. Screening reduces future treatment costs and enhances the quality of life of cancer patients.

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