

# Cervical Cancer: Incidence, Clinical Staging at Presentation and Treatment Modality from October 2020-March 2021

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## ABSTRACT

**Objective:** The aim of the research is to attempt to ascertain the incidence of cervical cancer at GPHC, most common clinical stage and histologic types at presentation and treatment modalities offered for different stages of the disease at the national referral hospital in Guyana.

**Methodology:** A retrospective chart review of the registry from the gynecology-oncology clinic of the Georgetown Public Hospital Corporation from October 1<sup>st</sup>, 2020 to March 31<sup>st</sup> 2020.

**Results:** There were a total of 33 new cases of cervical cancer admitted into the registry of the gynecology-oncology clinic of the Georgetown Public Hospital Corporation for the study period. The modal age of presentation was 41-50 years. Women of African and East Indian descent (36.36% each) accounted for the highest pool of disease among the six (6) races in Guyana. The International Federation of obstetrics and Gynecology (FIGO) Stage III disease was the predominant stage at presentation (42.4%). Squamous cell carcinoma (SCC) accounted for 93.94% of histologic diagnoses.

**Conclusion:** The late presentation (stage III) of 42.4% of patients with a tissue diagnosis of SCC (93.94% of the study cohort) of predominantly of African and East Indian descents and between the modal ages of 41-50 years were the main findings of this study. Preventative and pragmatic programs targeting these

demographic subsets will go a long way in reducing the burden of disease in Guyana.

**Keywords:** Cervical Cancer, Stage; Histology; Treatment

## BACKGROUND AND OBJECTIVES

Cervical cancer is a tumor involving cervix, originating from the endocervical canal, mostly from the squamo-columnar junction. It is an indolent tumor and the type of cells that the tumor originates from characterizes the nomenclature of itself. There are 3 histologic types and 4 (clinical) stages of cervical cancer. The histologic types include squamous cell cancer (SCC) which makes up 90% of tumors; adenocarcinomas (>5%) and both (<5%). The staging of cervical cancer is clinical and there are 4 stages, summarized thus- Stage I- confined to the cervix; Stage II- Cervix and Vagina; Stage III- local or regional (pelvic) spread and Stage IV- Distant spread.

Human papillomavirus (HPV) has been implicated in the pathogenesis of cervical cancer. There is a mountain of solid evidence that supports a causal link between HPV and cervical cancer. The most common mode of HPV is by sexual activity through contact with infected cervical, vaginal, vulvar, penile or anal epithelium.

Cervical cancer is the third most common malignancy in women worldwide. Cervical cancer is the second most common cancer in

developing countries, but only the tenth most common in developed countries. The highest incidences of cervical cancer in the world are found in Latin American and Caribbean countries whose mortality rates are seven times the cervical cancer mortality rates of North American countries, with an average regional estimate of 29.2 cases per 100,000 women based on the 2002 data. According to the WHO data for 2020, cervical cancer deaths for Guyana accounted for 1.27% of total deaths, putting Guyana's ranking as number 25 in the world in terms of mortality associated with the disease. There is a huge disparity in Morbidity and Mortality related to cervical cancer between developed and developing countries. This can be traced to not just economic and financial inequalities but also disparities in empowerment programs for women, educational inequalities, primary healthcare challenges (including poor screening programs and access to healthcare), the knowledge and awareness of the scourge of the disease and unavailability of primary preventive measures (vaccines). According to the Pan American Health Organization (PAHO), in 2018, the incidence of cervical cancer in Guyana was a close second breast cancer (11.0% Vs 22.6%). However, the mortality from cervical cancer was higher than that of breast cancer (16.5% Vs 13.6%). This study aims to capture the burden of new cases of cervical cancer, access the

stage, histologic preponderance and treatment modalities of the disease as indexed in a single hospital setting- the national referral hospital (Georgetown Public Hospital Corporation).

## METHODOLOGY

A retrospective chart review of the registry from the gynecology-oncology clinic of the Georgetown Public Hospital Corporation from October 1<sup>st</sup>, 2020 to March 31<sup>st</sup> 2020. The data collected included all women diagnosed with, had clinical staging for, and treated by providers at the Georgetown Public Hospital Corporation within the study period. Then, the data or results generated was analyzed.

## RESULTS

The results involved a pooled analysis of a total of 33 female patients that had tissue diagnosis for cervical cancer and met inclusion criteria within the stipulated period of the research.

The age ranges of the patients newly diagnosed with cervical cancer during the study period ranged from 21-60 years. Women of African and East Indian accounted for the greater proportion of new cases. Clinical stage III was the most common stage at presentation. The most common histologic type was squamous cell carcinoma. Tables 1 and 2 below highlight these characteristics in numerical detail.

**Table 1: Demographics, Clinical Stages, Histological Types and Treatment options offered**

	Stage 1	Stage 2	Stage 3	Stage 4	Grand Total
Total Number of Patients	7 (21.2%)	3 (9.1%)	14 (42.4%)	9 (27.3%)	33 (100%)
<b>Age</b>					
21-30	1(3.03%)	0	0	0	1(3.03%)
31-40	2(6.06%)	3(9.09%)	2(6.06%)	1(3.03%)	8(24.24%)
<b>41-50</b>	2(6.06%)	0	8(24.24%)	1(3.03%)	11(33.33%)
51-60	1(3.03%)	0	2(6.06%)	2(6.06%)	5(15.15%)
>60	1(3.03%)	0	2(6.06%)	5(15.15%)	8(24.24%)
<b>Race</b>					
African	3	0	3	6	12 (36.36%)
East Indian	1	2	9	0	12 (36.36%)
Indigenous	0	1	1	1	3 (9.09%)
Mixed	3	0	1	2	6 (18.18%)
<b>Histologic Type</b>					
SCC non Keratinizing	7	3	14	7	31 (93.94%)
Adenosquamous carcinoma	0	0	0	1	1 (3.03%)
Adenocarcinoma	0	0	0	1	1 (3.03%)
<b>Treatment Options Offered</b>					

Treatment Modality	Count	Percentage
Brachytherapy	1	2 (6.06%)
Chemo/Brachytherapy	2	2 (6.06%)
Chemo/EBRT	1	6 (27.27%)
Chemotherapy	1	2 (15.15%)
Chemotherapy, Surgery	1	1 (3.03%)
EBRT	1	1 (3.03%)
EBRT/Chemo and brachytherapy	1	3 (15.15%)
EBRT/Surgery	1	1 (3.03%)
Surgery	5	1 (21.21%)

Source: Author's Computation based on Cervical Cancer data collected from October 2020- March 2021

Table 2: Race, Clinical Stage and Histologic Types

Clinical stage	Race				Total
	African	East Indian	Indigenous	Mixed	
SCC non keratinizing type Stage 1B	2	1	0	3	6
SCC non keratinizing type Stage 2B	0	2	1	0	3
SCC non keratinizing type Stage 3b	2	7	0	0	9
SCC non keratinizing type Stage 4A	2	0	0	1	3
SCC non keratinizing type Stage 4B	2	0	1	1	4
Adenosquamous carcinoma Stage 4B	1	0	0	0	1
SCC non keratinizing type stage 3C1	1	0	1	1	3
SCC non keratinizing type Stage 1A2	1	0	0	0	1
SCC non keratinizing type stage 3C2	0	1	0	0	1
Adenocarcinoma stage 4B	1	0	0	0	1
SCC non keratinizing type Stage 3A	0	1	0	0	1
Total	12	12	3	6	33

Source: Author's Computation based on Cervical Cancer data collected from October 2020- March 2021.

## DISCUSSION

Data collected from the registry of the gynecology-oncology at the national referral hospital (Georgetown Public Hospital Corporation) reported 33 new cases of cervical cancer over the 6 month period (Oct 2020-March 2021). The new cases included all the stages of cervical cancer.

The age range of the patients was from 21-60 years, with the most common age group at presentation was the 41–50-year age bracket which accounted for 33.3% of the patients newly diagnosed with cervical cancer at this institution. This is consistent with findings in several studies and amplified by the American Cancer Society which postulates that Cervical cancer is most frequently diagnosed in women between the ages of 35 and 44 with the average age at diagnosis being 50.

Two-thirds of the affected population were equally and jointly shared by the those of African and East Indian descent.

In this study population, most patients (42.4%) were diagnosed with stage 3 disease at presentation. This is similar to findings by Nousheen Aziz et al on the Pattern of presentation of cervical carcinoma at Nuclear Institute of Medicine and Radiotherapy, Pakistan<sup>10</sup>

The most common histologic type in this study was Squamous Cell Carcinoma which account for 93.4% of all new cases of cervical cancer. According to this study, squamous cell carcinoma non keratinizing stage 3B was the most prevalent histologic type of cervical cancer accounting for 27.3% of all histologic types. East Indians represented the race frequently affected with this type of histologic type.

42.4% of the cases in this study presented with advanced disease stage 3. The implication of this data shows that most people newly diagnosed with cervical cancer do not visit the hospital until the disease has progressed to a severe stage.

Primary and secondary preventive measures like screening and treatment modalities are concentrated in health facilities in region 4. Though GPHC makes the largest contribution to in the delivery of these services. Due to the insidious nature of cervical cancer even with early screening, patients are more likely to present at later age. One-third of the treatment options offered within the 6 month of this study was the combination of chemotherapy and EBRT. Overall, the treatment options were in line with the treatment options developed by FIGO, tailored to the different clinical stages, available human and material resources and patient's acceptance of treatment modalities offered. Treatment options on offer at GPHC during the study period include; chemotherapy, EBRT, surgery and palliative care.

## CONCLUSION

The higher propensity of African and East Indian races to cervical cancer in Guyana, coupled with its detection at advanced stage is a healthcare concern. The burden of disease is borne, not just by the families but also by the country, with huge resource allocation to treatment needed to reduce the impact of the disease. A strategy to ramp up preventive measures will be more cost effective in the medium to long term.

### Declaration by Authors

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**Conflict of Interest:** The authors declare no conflict of interest.

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