

An Observational Study On Cervical Cancer In Sri Lanka And Its Prevention And Management.

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Abstract

Background: Cervical cancer is a major health concern worldwide, with significant prevalence in Sri Lanka. Despite being preventable through early detection and vaccination, the disease continues to cause high morbidity and mortality among Sri Lankan women, primarily due to late diagnosis and inadequate access to treatment and preventive measures.

Methods and Materials: This observational study employs a cross-sectional design to collect data from a representative sample of Sri Lankan women, using structured questionnaires and interviews. The study aims to determine the prevalence of cervical cancer, identify risk factors, assess awareness and preventive practices, and explore challenges in treatment and prevention. Statistical analysis will be performed on the collected data to achieve these objectives.

Results: The study is expected to provide detailed insights into the prevalence and risk factors of cervical cancer in Sri Lanka, along with the current state of awareness and preventive measures among women. It will also highlight the barriers to effective treatment and prevention, guiding future strategies.

Conclusion: The findings of this study will significantly contribute to understanding the impact of cervical cancer in Sri Lanka, offering evidence-based recommendations for healthcare providers, policymakers, and the community to improve cervical cancer prevention and management strategies, with the ultimate goal of reducing the incidence and mortality rates of the disease in the country.

Project Definition:

Cervical cancer is the fourth most common cancer in women worldwide. According to projections, there will be 604,127 new instances of cervical cancer worldwide in 2020 and 341,831 female fatalities from the disease.

The most common disease among Asian women is uterine cervix cancer, which is followed by breast cancer. Cervical cancer is the most prevalent gynecological cancer among Sri Lankan women. 1114 new cases were reported in 2019. As of 2012, the World Health Organization (WHO) reported that 690 women each year in Sri Lanka die from cervical cancer.

However, when these patients are diagnosed, the majority of them—roughly 70%—have advanced disease. Early detection and treatment increase patient survival rates to about 93% for at least 5 years. In more advanced phases, this survival drops to roughly 50–60%. In Sri Lanka, cervical cancer commonly strikes women between the ages of 50 and 75. As people age, cervical cancer cases increase.

Project horizon

- 2014–2017 Statistical analysis of cervical cancer in Sri Lanka
- Sri Lanka's prevalence of cervical cancer preventative and control measures
- Cervical cancer treatment in Sri Lanka to lower mortality and morbidity rates

Rationale:

Sri Lanka is an island nation in South Asia with a population of 22 million people. There are around 32,000 new instances of cancer diagnosed each year, with an age-standardized incidence rate (ASR) of 126.9 per 100,000 people. Cervical cancer is currently the fourth most common cancer in women, after colorectal, breast, and thyroid cancers. Its ASR, currently at 8.3 per 100,000 persons, has remained relatively constant over the past 20 years despite the steady rise in other cancers.

Sri Lanka's health system includes a publicly financed state health sector that is free at the point of delivery and commercial healthcare. The Ministry of Health's medical officer of health (MOH) units are geographically separated, each serving a population of between 60,000 and 100,000 people. They provide a preventive care system, which includes vaccination and cancer screening. 26 cancer units in tertiary care institutions nationwide provide curative cancer care. To train oncologists, Sri Lanka adopted a clinical oncology paradigm combining radiation and medical oncology. Clinical oncology postgraduate training lasts five to seven years and is offered by the Postgraduate Institute of Medicine at the University of Colombo.

Cytology is used to check for cervical cancer in all women over 35 who go to one of the MOH's island-wide well-women clinics. HPV DNA testing is not generally provided, even though several units have conducted experimental feasibility studies. Even though screening is widely available, it is still not frequently done, particularly among higher-risk groups. In research done in the western province of the nation, less than 10% of the eligible population had undergone cervical cancer screening.

In Sri Lanka, where a sizable portion of cases present with locally advanced tumors, presentation delays are a serious problem for many tumor types. For most patients with cervical cancer, surgical treatment is frequently not an option due to the advanced stage upon presentation. Hence, the standard of care for the majority of patients is curative intent external beam radiotherapy with concurrent radiosensitizing chemotherapy with intravenous cisplatin, followed by intracavitary brachytherapy. Seven tertiary care hospitals offer external beam radiotherapy, although only five have linear accelerators. In the state healthcare system of Sri Lanka, there are a total of 10 functioning linear accelerators and 8 cobalt teletherapy machines. Only two brachytherapy afterloaders, however, are readily available.

Project Setting:

Sri Lanka, a country in South Asia with over 21 million people, is a developing country. Cervical cancer is the second most common disease in women in Sri Lanka, accounting for roughly 17.1% of all

female cancer cases. Cervical cancer is another significant cause of death in Sri Lanka, accounting for roughly 3.3 fatalities per 100,000 females. The majority of cervical cancer cases are found to be advanced, making a successful cure challenging.

Relevance: Since cervical cancer is a major cause of illness and death in women, managing and preventing it is crucial for Sri Lanka's public health. Cervical cancer's impact can be significantly reduced by implementing preventive measures like vaccination, screening, and early detection. Additionally, improving access to care

Justification: The project aims to address the problems associated with cervical cancer prevention and management in Sri Lanka by developing a comprehensive program that includes vaccination, screening, and treatment. The main focus of this initiative will be the aforementioned objectives:

1. Improving Sri Lankan women's awareness of cervical cancer and prevention methods.
2. Increase the accessibility of vaccination and cervical cancer screening programs.
3. Increase the proportion of cervical cancer cases that are caught early.
4. Improve patient accessibility and quality of care for those who have been given a cervical cancer diagnosis.
5. Improve medical staff's capacity to treat and prevent cervical cancer.

The multi-sectoral implementation of the initiative will involve the Ministry of Health, corporations, and civil society organizations. Additionally, collaboration with foreign partners and organizations will be required to use resources and knowledge more effectively. By addressing the challenges surrounding its prevention and care in that country, this effort has the potential to significantly minimize the impact that cervical cancer has on women's health and well-being in Sri Lanka.

Objectives:

The following are the investigation's primary goals:

- a) To determine the prevalence of cervical cancer in Sri Lankan women.
- b) To identify the Sri Lankan population's cervical cancer risk factors.
- c) To look into Sri Lanka's challenges in treating and preventing cervical cancer.
- d) To offer strategies for treating and preventing cervical cancer in Sri Lanka that are backed by research.

Methodology:

- a) Study design: A cross-sectional observational technique will be used in this study to collect data from a representative sample of women from different parts of Sri Lanka.
- b) Sample Selection: A multi-stage sampling procedure will be used to choose the study participants. The sampling frame will also include urban and rural locations to ensure a diverse representation of Sri Lanka's population's habits, viewpoints, and awareness of cervical cancer prevention.
- c) Data Collection: Structured questionnaires and interviews will be used to collect primary data. The questionnaire will ask about demographic information, knowledge of cervical cancer, risk factors, preventive strategies, and awareness of screening programs.
- d) Data Analysis: The gathered data will be statistically analyzed in order to determine prevalence rates, pinpoint risk factors, assess knowledge and practices, and look into obstacles and issues. Descriptive statistics and inferential tests will be applied as required.

Research Techniques:

- a) Literature review: A complete evaluation of existing research will be carried out to understand more about the prevalence, risk factors, prevention, and treatment of cervical cancer in Sri Lanka. The obtained information will act as the basis for the study and help identify any knowledge gaps.

b) Data Collection: Trained interviewers will distribute structured questionnaires to the chosen participants. The appropriate ethical considerations, such as informed consent and confidentiality, shall be upheld throughout the data collection process.

c) Data Analysis: The acquired data will be coded, cleaned, and analyzed using the appropriate statistical techniques. Statistical tests like chi-square, logistic regression, and multivariate analysis will be used to analyze correlations between variables.

d) Study limitations: Potential limitations include recollection bias, social desirability bias, and the generalizability of the findings outside the study population.

Timetable:

The following timeline is an estimate for when this study will be completed:

One month is for the literature review and research plan, two months is for participant recruiting and ethics approval, three months is for data gathering, two months is for data interpretation and analysis, and one month is for creating and publishing a report.

With 22 million citizens, Sri Lanka is an island country in South Asia. With an age-standardized incidence rate (ASR) of 126.9 per 100,000 people, there are roughly 32,000 new cases of cancer diagnosed each year. 1 Behind breast, thyroid, and colorectal cancer, cervical cancer is currently the fourth most frequent malignancy in women. Although other malignancies have steadily increased over the past 20 years, its ASR, which is currently 8.3 per 100,000 people, has remained largely unchanged.

In addition to commercial healthcare, Sri Lanka's health system includes a publicly funded state health sector that is free at the point of delivery. Medical Officer of Health (MOH) units of the Ministry of Health, which are divided into geographical subdivisions, administer the preventive care system, which includes immunization and cancer screening.

Sri Lanka established a clinical oncology paradigm for educating oncologists that incorporates both medical and radiation oncology. The Postgraduate Institute of Medicine at the University of Colombo offers postgraduate clinical oncology training that lasts 5 to 6 years and includes a 1–2 year overseas fellowship at a center of excellence.

Screening and Vaccination:

In Sri Lanka, females aged 20 to 59 reported a 3.3% prevalence of human papillomavirus (HPV) infection for any genotype and a 1.2% prevalence for high-risk genotypes. The vaccination against HPV was added to the national immunization schedule on July 10, 2017, and Sri Lanka's vaccination program has frequently been praised as an example for the area. All girls are now given two doses of the recombinant quadrivalent vaccine at the end of grade six, six months apart. According to the World Health Organization, Sri Lanka might save more than 50,000 lives in the next century by successfully implementing the HPV vaccine program.

All women aged 35 and older who visit one of the island-wide well-women clinics run by the MOH get screened for cervical cancer using cytology. Although several units have conducted experimental feasibility studies, HPV DNA testing is not typically offered. Despite being widely available, screening is still not widely used, especially among higher-risk groups. Less than 10% of the eligible population had undergone cervical cancer screening, according to a study carried out in the country's western province.

The low screening uptake causes late presentation, and most patients have advanced-stage diagnoses. According to statistics from the National Cancer Registry, nearly 50% of cases are in stage III or IV at diagnosis, whereas just 10% of cases are in stage I. Hospitals that provide secondary and tertiary care offer diagnostic services. Only three primary tertiary care facilities offer specialized gynecological oncological surgery procedures.

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Diagnosis and Treatment:

Delays in presentation are a significant problem for many tumor types in Sri Lanka, where a significant fraction of cases present with locally progressed or metastatic disease. For the majority of patients with cervical cancer, surgical treatment is frequently not an option due to the advanced stage upon presentation. Therefore, the standard of care for the majority of patients is curative intent external beam radiotherapy with concurrent radiosensitizing chemotherapy with intravenous cisplatin, followed by intracavitary brachytherapy. Seven tertiary care hospitals offer external beam radiotherapy. However, only five of them have linear accelerators. In the state healthcare system of Sri Lanka, there are a total of 10 functioning linear accelerators and 8 cobalt teletherapy machines.

However, the public health system only has two brachytherapy afterloaders, which causes substantial delays in care administration. In the public health sector, there is just one linear accelerator that has cone beam computed tomography verification imaging. Intensity-modulated radiation with an image guide is not a practical option for most patients. Therefore, in patients who are healthy enough to undergo it, external beam radiation is administered using a traditional four-field box approach at a 45 to 50 Gy dose in 23 to 25 fractions. In contrast, concomitant IV weekly cisplatin is administered. A sizable majority of patients r8 It has been demonstrated that individuals with head and neck squamous cell carcinoma who underwent cobalt teletherapy had a worse prognosis than those who underwent intensity-modulated radiation in linear accelerators. Cervical cancer is most likely to follow the same pattern.

Despite the fact that a three-fraction brachytherapy regimen of 21 to 24 Gy in three fractions is the optimum regimen, treatment delays have forced some patients to accept a two-fraction regimen of 9 Gy each. Receive their treatment in cobalt teletherapy units due to the lack of linear accelerators.

Only 10% of patients (both external beam radiotherapy and brachytherapy) finished their whole course of radiotherapy (both within 60 days of starting treatment, according to a recent study). Patients who experienced prolonged treatment delays had poor results, as expected.

Gynecological and surgical oncology departments in the primary tertiary care facilities offer salvage surgery for patients with residual or recurring illnesses. Once more, a major barrier to providing high-quality care is the absence of qualified surgeons, operating rooms, and intensive care facilities.

The 26 cancer centers across the US offer palliative chemotherapy to patients with metastatic and unresectable illnesses. The governmental healthcare system has limited access to immunotherapeutic drugs like nivolumab and pembrolizumab. Although there are legitimate concerns about bevacizumab's cost-effectiveness in nations with little resources like ours, it is nonetheless available.

Conclusion:

Cervical cancer is projected to pose a considerable burden in Sri Lanka during the next ten years despite the widespread use of the HPV vaccine. In these conditions, improving screening with HPV DNA testing and increasing radiation and surgical resources are essential to guaranteeing future improvements in curative outcomes.

The prevalence, risk factors, and available treatments for cervical cancer in Sri Lanka will all be significantly clarified by the results of this observational study. By offering evidence-based advice for decision-makers, healthcare providers, and the community, the findings will aid in developing and implementing successful cervical cancer prevention and management programs in Sri Lanka. The study's findings will increase national understanding of cervical cancer and perhaps reduce the disease's incidence and mortality rates.

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