



Cervical Cancer

Cervical Cancer in Sri Lanka

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Introduction

Sri Lanka is an island nation in South Asia, with a population of 22 million people. Nearly 32,000 new cases of cancer are diagnosed each year with an age-standardized incidence rate (ASR) of 126.9 per 100,000 population.¹ Cervical cancer is now the fourth commonest cancer among females behind breast, thyroid, and colorectal cancer.¹ Its ASR which currently stands at 8.3 per 100,000 population has remained relatively stable over the past two decades, although incidence of other cancers has seen a steady rise during this period.¹

Sri Lanka's health system comprises a public funded state health sector which is free at the point of delivery, functioning alongside private health care.² The preventive care system which provides vaccination and cancer screening is delivered by medical officer of health (MOH) units of the Ministry of Health, separated in geographic subdivisions that each caters to a population of around 60,000 to 100,000 people.³ Curative cancer treatment is provided by 26 cancer units in tertiary care hospitals established throughout the country.² Sri Lanka adopted a clinical oncology model comprising both medical and radiation oncology in the training of oncologists.² Postgraduate training in clinical oncology is delivered by the Postgraduate Institute of Medicine of the University of Colombo and spans 5 to 6 years including an overseas fellowship of 1 to 2 years in a center of excellence.²

Vaccination and Screening

The prevalence of human papillomavirus (HPV) infection for any genotype among females aged 20 to 59 years in Sri Lanka was found to be 3.3%, while prevalence for high-risk geno-

types was 1.2%.⁴ Sri Lanka's immunization program has often been hailed as an exemplar for the region, and HPV vaccination was introduced to the national immunization schedule on July 10, 2017.⁴ Two doses of recombinant quadrivalent vaccine are now given, 6 months apart, to all girls on completion of 10 years of age (grade 6).⁴ The World Health Organization estimates that successful implementation of the HPV vaccination program would save more than 50,000 lives in the next century in Sri Lanka.⁵

Screening for cervical cancer with cytology is provided to all women aged 35 years or older, by well women clinics conducted by the MOH units distributed across the island. HPV DNA testing is not routinely provided, although pilot feasibility studies were conducted in some units. Despite wide availability, utilization of screening remains low especially among higher risk groups. One study conducted in the western province of the country revealed that less than 10% of the eligible population had undergone screening for cervical cancer.

The low utilization of screening results in late presentation, and most patients are diagnosed in advanced stages.⁴ According to data from the National Cancer Registry, nearly 50% of cases are in stage III or IV at diagnosis with only 10% of cases being in stage I.¹ Diagnostic services are available in secondary and tertiary care hospitals. Specialist gynecological oncological surgical services are only available in three main tertiary care hospitals in the country.²

Diagnosis and Treatment

Delays in presentation is a major challenge across many tumors in Sri Lanka and has led to a high proportion of

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presenting with locally advanced or metastatic disease.^{6–8} Advanced stage at presentation means that surgical treatment is often not feasible for most patients with cervical cancer.⁹ Consequently, curative intent external beam radiotherapy with concurrent radiosensitizing chemotherapy with intravenous cisplatin followed by intracavitary brachytherapy is the standard treatment delivered to most patients.⁹ External beam radiotherapy is available in seven tertiary care hospitals, but only five centers are equipped with linear accelerators.² Sri Lanka has in total 10 functional linear accelerators and 8 cobalt teletherapy units in the state health sector.² However, only two brachytherapy afterloaders are available in the public health system, leading to significant delays in the delivery of treatment.⁹

Only one linear accelerator in the state health sector is equipped with cone beam computed tomography verification imaging.^{2,9} As such, the delivery of intensity-modulated radiotherapy with image guidance is not a viable option for most patients. Consequently, external beam radiotherapy is delivered using a conventional four-field box technique to a dose of 45 to 50 Gy in 23 to 25 fractions with concurrent intravenous weekly cisplatin in patients fit enough to receive it.⁹ Due to the dearth of linear accelerators, a significant proportion of patients receive their treatment in the cobalt teletherapy units.⁸ It was shown that patients with squamous cell carcinoma of the head and neck treated in cobalt teletherapy units had a poorer outcome in comparison to those treated with intensity-modulated radiotherapy in the linear accelerators.⁸ The same is likely to hold true for cervical cancer.

Although a three-fraction brachytherapy regimen of 21 to 24 Gy in three fractions is the preferred regimen, treatment delays have led to a two-fraction regimen of 9 Gy each being offered to some patients.⁹ A recent study revealed that only 10% of patients completed their full course of radiotherapy (both external beam radiotherapy and brachytherapy) within 60 days of initiation of treatment.⁹ As expected, outcomes were poor in patients who had significant treatment delays.⁹

For patients with residual or recurrent disease, salvage surgery is provided by the gynecological and surgical oncology departments in the main tertiary care centers. Once again, paucity of specialized surgeons as well as lack of operating room and intensive care facilities is a significant obstacle to the delivery of good quality care.

For patients with unresectable and metastatic disease, palliative chemotherapy is delivered by the 26 cancer centers in the country. The immunotherapeutic agents such as nivolumab and pembrolizumab are not widely available in the state health sector. Bevacizumab is available, although

valid questions have been raised about its cost-effectiveness in resource-limited countries such as ours.

Conclusion

Despite the roll out of the HPV vaccine, cervical cancer is likely to pose a significant burden in Sri Lanka in the next decade. In these circumstances, better screening with HPV DNA testing and expanding radiotherapy and surgical resources are pivotal to ensure tangible gains in curative outcomes in the future.

Funding

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Conflict of Interest

None declared.

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