

# Assessment of Cervical Cancer Screening and Preventative Measures

Dmitry Kovelskaya\*

Department of Oncology, National Academy of Sciences of Ukraine, Kiev, Ukraine

## Opinion Article

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**\*For Correspondence:**

Dmitry Kovelskaya, Department of Oncology, National Academy of Sciences of Ukraine, Kiev, Ukraine

**E-mail:**

**dmitrykovelskaya@yahoo.com**

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## ABOUT THE STUDY

One of the rare cancers that can today be largely avoided by immunisation and good screening is cervical cancer. Yet, it continues to be a significant burden in many cultures, especially in those parts of the world with scarce economic resources. One of the most prevalent malignancies in women is cervical cancer. In addition to the women themselves, the disease load also impacts their offspring and extended family. This chapter examines the disease's effects on women globally and its efforts to be controlled.

As a companion to the chapter on cervical cancer screening and preventative measures, we present the disease burden and risk factors for cervical cancer development. Reviewing data on cervical cancer incidence, mortality, years of life lost, and risk factors, we pinpoint areas that require more research. Epidemiological studies have shown links between sexual behaviour and cervical cancer for more than a century, which has led to the theory that one or more sexually transmissible agents must be a primary cause of cervical cancer.

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The aetiology of cervical cancer, however, has just recently been determined; it is now understood that over 99% of cases globally are connected to specific strains of Human Papillomaviruses (HPV). Currently, the identification of type-specific HPV DNA in cancer cells serves as the greatest indicator of exposure. These infections are widespread in juvenile age groups and typically go away on their own. In most populations, the percentage of women with HPV DNA after the third decade ranges between 5 and 20%, and this group likely represents the genuine high-risk demographic for cervical cancer.

By HPV testing and vaccination, these findings present fresh chances to enhance cervical cancer screening and primary prevention. They also bring out the logistical and psychological difficulties related to the control of a STI that may be oncogenic. The likelihood of pelvic lymph node metastasis in cervical cancer in its early stages is 15%. Thus, more than 80% of patients do not benefit from a full pelvic lymphadenectomy but may experience its side effects, which include bleeding, nerve damage, the development of lymphocysts, and lymphedema.

The sentinel lymph node is the initial lymph node to receive lymphatic drainage from a certain anatomic site and the initial node from which metastatic illness will spread from a primary tumour. Conceptually, a full lymphadenectomy can be avoided if the sentinel node is negative because it implies that the other lymph nodes in the regional basin are likewise negative. Many single-institution series that highlight their expertise and the viability of the sentinel node procedure in cervical cancer have been published in the literature. Technetium-99 (99Tc) radioactive tracer or blue dye is peripherally injected into the tumour for sentinel lymph node evaluation.

The sentinel node is identified intraoperatively when it is blue or when a gamma probe reads high radioactive levels. By using the combined technique of a radioactive tracer and blue dye, sentinel lymph node mapping has 92% sensitivity for early cervical cancer and a 97% detection rate. Restricting to cancers smaller than 20 mm increases sensitivity compared to tumours of a larger size. Sentinel node mapping has advantages such as reducing morbidity by avoiding a complete lymphadenectomy, identifying aberrant drainage pathways that may influence treatment choices and detecting micrometastases by ultrastaging that might not be detected by conventional hematoxylin and eosin staining. The sentinel lymph node is the lone node with metastatic disease in up to 80% of cases.

The patient is more likely to experience a relapse and may even pass away if lymphatic metastases are not recognised and treated. If certain criteria are followed and the sentinel node method is subject to quality control, false-negative rates can be reduced. Because patients with larger tumours have a higher probability of lymph node replacement by tumour, restricting lymphatic outflow, the surgery should be limited to those with early stage cancer. Even if a lymph node is not the sentinel node, it should be removed if it is swollen.

Even if the sentinel node is only detected unilaterally, each hemipelvis needs to be evaluated. The gynecologic oncologist, gynecologic pathologist, and nuclear medicine specialist should work together to build experience in sentinel lymph node mapping and enhance its effectiveness. The safety of skipping the entire lymphadenectomy in patients with negative sentinel lymph nodes must be confirmed by prospective multicenter investigations. Sentinel lymph node mapping is projected to eventually become a common component of surgical care of early-stage cervical cancer with time and more experience.