
PRESENTATION

Cervical cancer: New perspectives for diagnosis, prevention and control in developing countries

Introduction

Cancer prevention

Knowledge of the epidemiology of cervical cancer (CC) is essential for planning activities for controlling cancer. Studies from basic, clinical and epidemiological research provide information regarding mechanisms in the carcinogenesis process, and they estimate the incidence of the illness and tendencies in mortality, as well as the impact of this illness on communities. These studies also contribute toward identifying high risk factors, and present evidence from populational research that helps to determine the effectiveness of primary and secondary prevention measures on this illness. The *Journal Salud Pública de México* is pleased to present this special issue on *Cervical cancer: New perspectives for diagnosis, prevention and control*. Some of the most outstanding researchers in this area of knowledge at the international level have contributed to this monographic issue. The information provided establishes the basic premises that should be considered at the three levels of cervical cancer prevention.

Molecular epidemiological evidence for this illness suggests that the carcinogenic process can be addressed from three perspectives: a) infection from the human papilloma virus (HPV) as a necessary but insufficient cause for the development of cervical neoplasia; b) when a chronic infection from HPV leads to the progression to a high-grade intraepithelial lesion, and finally, c) invasion, when early detection has not taken place. In this regard, currently more than 30 HPV genotypes that infect the female genital tract have been identified, and the intraepithelial lesions for which it is not possible to identify HPV DNA probably represent diagnostic errors more than a particular biological mechanism of carcinogenesis. In this context, the authors of this special issue emphasize the diverse

possibilities for diagnosis, prevention and control, in line with the natural history of the illness.

Primary prevention

Vaccination

HPV is the causal agent of cervical cancer and other cancers in the genital area, and the fact that infectious agents represent the primary cause of cancer in developing countries opens up new prospects for preventing tumors through the use of safe, effective vaccinations. The most immediate antecedent can be found in the prophylactic vaccination programs against infection from the hepatitis B virus. These programs have been very effective—not only in reducing cases of hepatitis but also of liver cancer. Prophylactic and therapeutic vaccinations against HPV infection are being tested by many research groups around the world, and this intervention for decreasing the incidence and mortality from cervical cancer appears to be highly promising, and the evidence is presented in this special issue.

Secondary prevention

Low-cost and high-cost options for early detection of cervical cancer

For many subjects with a diagnosis of cancer, their survival has remained stable. In this regard, the primary factor in prognosis is detection in the early stages of the illness. Tests for early cancer detection offer the opportunity to intervene and prevent the progression of this neoplasia. Currently there are a number of epidemiological tests that are alternatives for early detection, in addition to the cervical cytology screening (Pap smear).

In this respect, the Pap smear, which was developed more than 50 years ago, has managed to significantly decrease the elevated rates of incidence and mortality in developed countries, since it is highly effective when it is regularly repeated. Unfortunately, detection in developing countries is very low, and the quality of detection programs is inadequate.

Under the best conditions, the use of the Pap test has limitations, and these are even being reported in developed countries. With the Bethesda System classification, we find high rates of AGUS/ASCUS diagnoses (atypical cells with undetermined significance) which in Latin American countries would indicate the need to repeat the cytological study. Also, in countries with organized programs for detecting cervical-uterine cancer, it has been reported that at least 50% of women with invasive cervical cancer have had a Pap test. One of the primary problems in countries with a high incidence and mortality from cervical cancer is that the effectiveness of the Pap test is based on the quality of the sample-taking from the cervical transformation zone, and in Latin American countries this practice is inadequate.

For this reason, and as established by a number of authors, it is necessary to modify and enhance the use of conventional cytological testing, together with technological alternatives such as high-risk HPV detection, since improved techniques can be less expensive than more visits. It is also necessary to consider that in geographic

areas without some type of infrastructure, it is possible to use the cervical visual image to identify macroscopic lesions that are compatible with cervical neoplasia.

Tertiary prevention

Finally, it is necessary to take into consideration that in clinical oncology practices, the decision to use antineoplastic and/or palliative treatment for advanced stages of the illness is very complex. In addition to the scientific basis for decisions, the factors that should be considered are personal factors for patients and their families as well as economic factors and those related to physical infrastructure and available human resources, and also policies on institutional reimbursement, among others. In this special issue, basic premises regarding the treatment of cervical intraepithelial neoplasia are presented, as well as recommendations for possible algorithms for complementing diagnosis, in line with the detection strategy chosen.

We hope the information provided by a number of experts in cervical cancer research will contribute toward improving the guidelines for diagnosis, prevention and control which are currently available in developing countries.

Eduardo Lazcano-Ponce, Dr Sc.*
 Patricia Alonso de Ruiz, MD.**
 Mauricio Hernández-Avila, Dr Sc.***

* Dirección de Enfermedades Crónicas, Centro de Investigaciones en Salud Poblacional, Instituto Nacional de Salud Pública. Cuernavaca, Morelos, México.

** Unidad de Patología, Facultad de Medicina, Universidad Nacional Autónoma de México. Hospital General de la Ciudad de México, México.

*** Dirección del Centro de Investigaciones en Salud Poblacional, Instituto Nacional de Salud Pública, México.