Summary

Cervical cancer was once a leading cause of cancer death in the world. Now, invasive cervical cancers are relatively uncommon. This change is probably mostly due to effective identification and eradication of cancer precursor lesions. Several screening modalities are now available for early detection of cervical cancer and its precursor lesions.

Cervical cancer is a disease that can be prevented through both primary prevention and early detection using screening techniques.

The screening modalities include cytology or Pap smear, visual inspection using acetic acid (VIA) or Lugol's iodine (VILI) and high-risk humanpapilloma virus (HPV) screening. The sensitivity, specificity and predictive values are the important indicators of any screening tool in considering practical implications.

Widespread programmatic or opportunistic screening with the Papanicolaou cytology technique has likely reducing about three-fourths of the contributed to cervical cancer burden in high income countries during the last 50 years. In spite of its success, it is not 100% accurate

New technologies have been developed to try to circumvent the problem of false-negative pap smears. The new techniques consist of alternative ways to prepare and read Pap smears including thin layer liquid based cytology and automated system.

The addition of HPV-DNA testing improves the specificity of cytological detection of cervical changes that warrant additional investigation. There is insufficient evidence to support the use of HPV-DNA testing as a primary screening test for the early detection of cervical cancer

The new modalities in diagnosis of premalignant lesions of cervix include optical spectroscopic techniques which are based on biophysical properties of light and tissue ilicit.

Once a histologic diagnosis warranting treatment is established, the goal is to eradicate the source of premalignancy completely. This usually involves ablation or excision of the transformation zone and other identified abnormalities. Ablative therapy destroys the abnormal cells and the surface of the transformation zone. Excisional therapy also provides a surgical specimen that is examined in the laboratory to evaluate the severity of the diseased tissue removed, and if possible, the completeness of the procedure.

Cryotherapy, electrocoagulation, cold coagulation and laser ablation are different methods of ablative treatment of CIN. The loop electrosurgical excision procedure (LEEP), using thin wire loop electrodes and long needle electrode (electro-surgical cylindrical excision) are the major forms of outpatient excisional treatment of CIN.

Of all available and effective treatments of CIN, cryotherapy and LEEP are appropriate for both high- and low-resource settings for several reasons. First, they require the least financial investment for equipment, maintenance and repair. Second, once colposcopy has been mastered,

cryotherapy and LEEP can be quickly learned and result in high cure rates and few complications.

The recent advances in immunology and biotechnology have opened new prospectives for the development of vaccine therapy against cancer and cancer inducing agents.

The ability to generate human papillomavirus (HPV) virus-like particles (VLPs) by the synthesis and self assembly in vitro of the major virus capsid protein L1 has transformed the prospects for preventing both benign and malignant HPV-associated genital disease and, in particular, for significantly reducing the incidence of cervical carcinoma in women.

Two HPV L1 VLP vaccines have been developed, Gardasil and Cervarix, generating high titers of neutralising antibody that persist at measurable levels higher than those measured in natural infections for at least 60 months post-vaccination Therapeutic vaccines are being developed to protect HPV positive persons against tumour development.

Results from several clinical trials have demonstrated that HPV vaccines are safe and highly immunogenic. These trials have documented vaccine efficacy in prevention of persistant HPV and more important of HPV associated neoplasia.