Revised FIGO staging of cervical cancer

Cervical cancer staging remains one of the oldest staging systems for malignancies in the history of cancer. The initial professional body responsible for cervical cancer staging was the Radiological Sub-Commission of the Cancer Commission of the Health Organization of the League of Nations founded in 1928. Annual reports were published by the same commission and, in 1958, the International Federation of Gynaecology and Obstetrics (FIGO) became the official patron of the annual report. The FIGO Committee on Gynaecologic Cancer undertakes the responsibility to review and make recommendations to changes in the staging systems, based on available scientific information. Since the initial staging publication, there have been eight changes to the staging system for cervical cancer, with the most recent being in 2009. Thus far, most of the changes have pertained to stage I and its sub-stages.

Optimal management of any malignancy requires that the extent of disease, the site of origin of the disease and the biology of the disease be considered. The main function of staging systems is to provide a classification so that comparison of treatment modalities can be made without ambiguity. Staging systems provide prognostic information as well as risks of recurrence. In 1966, the International Union Against Cancer (UICC) proposed a tumour-node-metastasis system (TNM) for carcinoma of the cervix. Both the FIGO and TNM systems are virtually identical, but the FIGO system remains the most widely utilised system in the world. However, any cancer staging will always be subject to change, in keeping with new scientific knowledge.

Unlike FIGO staging systems for other gynaecological cancers, cervical cancer staging remains a clinical staging system. This is based on clinical assessment of the anatomical extent of disease from pelvic examination, basic radiological studies such as lung radiographs, and endoscopic studies such as cystoscopy. Clinical staging is preferably performed under anaesthesia. Although many clinicians may utilise complex imaging techniques, such as computerised scans and magnetic resonance imaging, the use of such techniques is not a prerequisite according to the FIGO guidelines to determine staging for cervical cancer. Furthermore, determination of lymph node spread is not part of the cervical cancer staging system, despite the fact that lymph node metastasis is an important prognostic factor for survival in early-stage disease. The prognosis for a patient with lymph node metastases in early-stage cervical cancer is poor.

The three basic features of a good staging system are validity, reliability and practicality. Validity is present when similar outcomes will result with different presentations of the disease. Reliability will ensure that identical cases would be assigned to the same stage and practicability ensures that the system can be applied in a variety of clinical settings. *FIGO still recommends that cervical cancer should be clinically staged.* In comparison with surgical staging, clinical staging for cervical cancer has been shown to result in understaging of 20-30% of stage IB patients. On the other hand, surgical staging cannot be utilised worldwide, which would reduce the practicality of the system. In low-resource settings, late-stage presentations are common and surgical facilities are scarce.

The changes to the FIGO staging for cervical cancer include the removal of stage 0 (as this represents a severe form of epithelial dysplasia), and the subdivision of stage IIA into IIA1 and IIA2. The latter change is probably valid, reliable and practical. It is valid, because tumour size remains an important determinant of prognosis and, similar to Stage IB cervical cancers, level A evidence provides information that the prognosis is determined by tumour size also in stage IIA, with 4cm as a cut-off in maximum diameter.

The reproducibility of this division will depend on the modality used to measure tumour diameter. The determination of tumour size is usually made clinically. Although it is usually possible to clinically estimate the size of a lesion in a patient with stage IIA disease, it may be cumbersome and possibly inaccurate and, therefore, many clinicians rely on imaging for accurate tumour size determination. It is especially the vertical tumour size that is frequently underestimated clinically. The reproducibility and comparability of imaging modalities for this purpose remains uncertain. FIGO has maintained

that, since such modalities may not be available in low-resource settings, the staging is a clinical one.

The practicality of the new staging is partly determined by the usefulness of this division for treatment decisions. The separation of stage IIA could influence primary treatment decisions, or could be used to determine the need for adjuvant therapy. As far as primary treatment is concerned, stage IIA1 has a good prognosis and may be treated with surgery or chemo-radiotherapy. Choices of treatment are often determined by available resources, but most Southern African centres will offer primary radical surgery with radical hysterectomy and pelvic lymph node dissection as an option to these patients. Larger tumours have a more guarded prognosis and are more difficult to remove radically with surgery. The choices for primary treatment of stage IIA2 cervical cancer include primary chemoradiation, primary radical hysterectomy and bilateral lymphadenectomy, or neoadjuvant chemotherapy followed by radical hysterectomy and pelvic lymphadenectomy. Since these tumours are bulky, adjuvant radiation is more likely to be necessary. Lymph node spread is also more common with bulky tumours and will necessitate referral for adjuvant chemoradiation.

Most centres previously used tumour size and, thus, FIGO sub-stage to decide on modality of primary therapy in stage I. Similarly, tumour size was used intuitively in stage IIA before the changed staging. With the new formal division, it is hoped that even more patients will receive individualised therapy according to their unique tumour characteristics. It is anticipated that the new staging can also improve comparability of reported treatment outcomes, as stratification is improved.

Change is a fact of life. The new staging of cervical cancer has merit and should be introduced into specialised units. With the constant evolution of scientific knowledge, it is expected that the FIGO staging of cervical cancer will be reviewed again in the future. The method of staging (clinical vs surgical), the role and evaluation of lymph node metastases, and the use of imaging modalities in the staging work-up should be revisited.

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FIGO Staging of Cervical Cancer, 2009
(Adapted from Pecorelli S. Revised FIGO staging for carcinoma of the vulva, cervix and endometrium. Int J Gynecol Obstet. 2009;105:103–104.)

Stage I	**Carcinoma is strictly confined to the cervix**
IA	Invasive carcinoma which can be diagnosed only by microscopy, with deepest invasion 5 mm and largest extension ≥ 7 mm
IA1	Measured stromal invasion ≤ 3 mm in depth and extension ≤ 7 mm
IA2	Measured stromal invasion > 3 mm and < 5 mm, with an extension < 7 mm
IB	Clinically visible lesions limited to the cervix uteri, or preclinical cancers greater than stage IA
IB1	Clinically visible lesion ≤ 4 cm in greatest dimension
IB2	Clinically visible lesion > 4 cm in greatest dimension
Stage II	**Cervical carcinoma invades beyond the uterus, but not to the pelvic wall or to the lower third of the vagina**
IIA	Without parametrial invasion
IIA1	Clinically visible lesion ≤ 4cm in greatest dimension
IIA2	Clinically visible lesion > 4cm in greatest dimension
IIB	With obvious parametrial invasion
Stage III	**Tumour extends to the pelvic wall, and/or involves the lower third of the vagina, and/or causes hydronephrosis or non-functioning kidney**
IIIA	Tumour involves the lower third of the vagina, with no extension to the pelvic wall
IIIB	Extension to the pelvic wall and/ or hydronephrosis or non-functioning kidney
Stage IV	**Carcinoma has extended beyond the true pelvis or has involved (biopsy proven) the mucosa of the bladder or the rectum; bullous oedema, as such, does not permit a case to be classified as Stage IV**
IVA	Spread of the growth to adjacent organs
IVB	Spread to distant organs