Gynecologic Cancer InterGroup
Cervix Cancer Research Network

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FIGO Staging of Cervix Cancer

Proposed Changes

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FIGO Staging of Carcinoma of the Cervix Uteri (2008)

Stage I The carcinoma is strictly confined to the cervix

(extension to the corpus would be disregarded)

•IA Invasive carcinoma which can be diagnosed only by microscopy, with deepest invasion ≤5 mm and largest extension ≤7 mm

- IA1 Measured stromal invasion of ≤3.0 mm in depth and extension of ≤7.0 mm
- IA2 Measured stromal invasion of >3.0 mm and not >5.0 mm with an extension of not >7.0 mm

•IB Clinically visible lesions limited to the cervix uteri or pre-clinical cancers greater than stage IA[a]

- IB1 Clinically visible lesion ≤4.0 cm in greatest dimension
- IB2 Clinically visible lesion >4.0 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 ≤4.0 cm in greatest dimension
- IIA2 Clinically visible lesion >4 cm in greatest dimension
- IIB With obvious parametrial invasion

Stage III The tumor extends to the pelvic wall and/or involves lower third of the vagina and/or causes hydronephrosis or non-functioning kidney[b]

- IIIA Tumor involves 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 The carcinoma has extended beyond the true pelvis or has involved (biopsy proven) the mucosa of the bladder or rectum. A bullous edema, as such, does not permit a case to be allotted to Stage IV

- IVA Spread of the growth to adjacent organs
- IVB Spread to distant organs

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Clinical staging is imprecise and fails to accurately predict disease extension to the para-aortic nodes in 7% of patients with stage IB, 18% with stage IIB, and 28% with stage III disease

Such patients will have “geographic” treatment failures if standard pelvic radiotherapy ports are used.

As a result, treatment plans for these patients are individualized based on CT scans, PET scans, and biopsies of the para-aortic lymph nodes for consideration of extended-field radiotherapy.

Berman M, Keys N, Creasman W, et al. Survival and patterns of recurrence in cervical cancer metastatic to para-aortic lymph nodes. *Gynecol Oncol* 1984;19:8–16.

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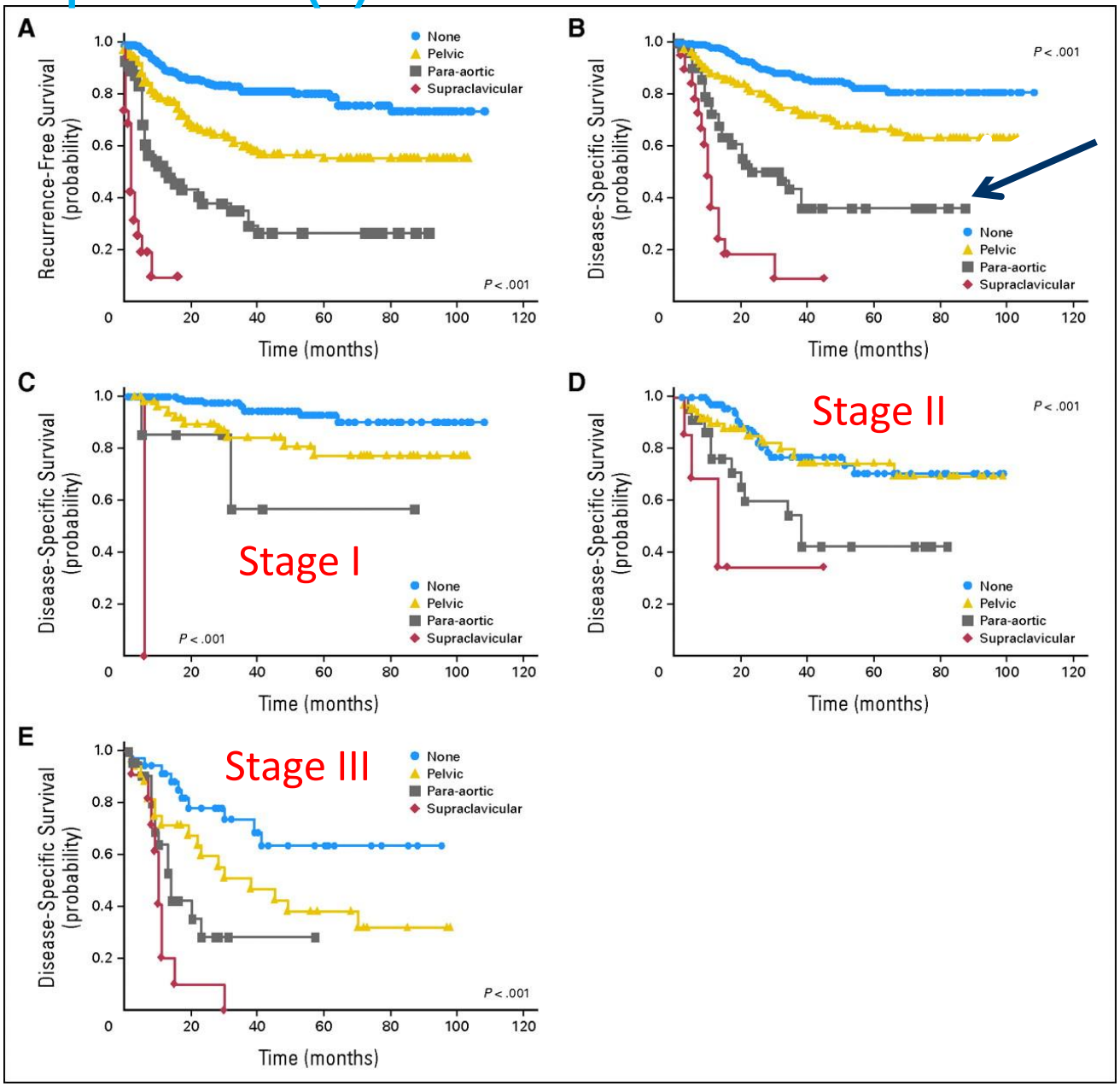
Incidence of Pelvic and Para-aortic Lymph Node Metastasis by Stage

Stage	No. of Patients	Positive Pelvic Nodes (%)	Positive Para-aortic Nodes (%)
IA1 (≤3 mm)	179[a]	0.5	0
IA2 (>3–5 mm)	84[a]	4.8	<1
IB	1,926[b]	15.9	2.2
IIA	110[c]	24.5	11
IIB	324[c]	31.4	19
III	125[c]	44.8	30
IVA	23[c]	55	40

Fig 2. Kaplan-Meier (A) recurrence-free survival for all 513 patients



> 35% DSS

Kidd, E. A. et al. J Clin Oncol; 28:2108-2113 2010

HUNTSMAN CANCER INSTITUTE UNIVERSITY OF UTAH

- **The FIGO Oncology Committee proposes to maintain the current Cervical Cancer Staging System while modifying the format of data collection and notations to include patient imaging and pathologic findings when performed in addition to other clinical findings.**

- **As part of this proposal, the forms used to record and collect the data will be revised and standardized using the methodologies established by standard tumor registries. These accrued data will then be analyzed to facilitate the eventual development of refined subclassifications of stages to reflect distinct categories of outcome and survival of patients.**

- **Subcategories can be created for all patients indicating whether they had radiographic or pathologic staging. The principle issue is whether or not if there is metastatic disease is present in lymph nodes.**

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General Recommendations

I. We recommend notations for a clinical, radiographic, or pathological findings, collection and analysis of these data. These notations would be added to the current system to facilitate collection of data when performed.

- **In this model, a parenthetical notation of R and P would be added to the current FIGO clinical stage.**
- **Clinical with minimal imaging**
- current staging system- no additional designation
- radiographs as permitted by current staging,
- e.g., chest x-ray, IVP, ultrasound

- **+ (R) Radiographic findings- clinical with more extensive imaging**
- – cross-sectional imaging, e.g., CT, PET, MRI scans

- **+ (P) Pathological findings– biopsy and FNA proven findings**

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General Recommendations

When collecting radiographic imaging, we recommend recording the type of imaging as follows-

- e.g., IB2(R) would be a IB2 patient with a extensive radiographic imaging as outlined below.

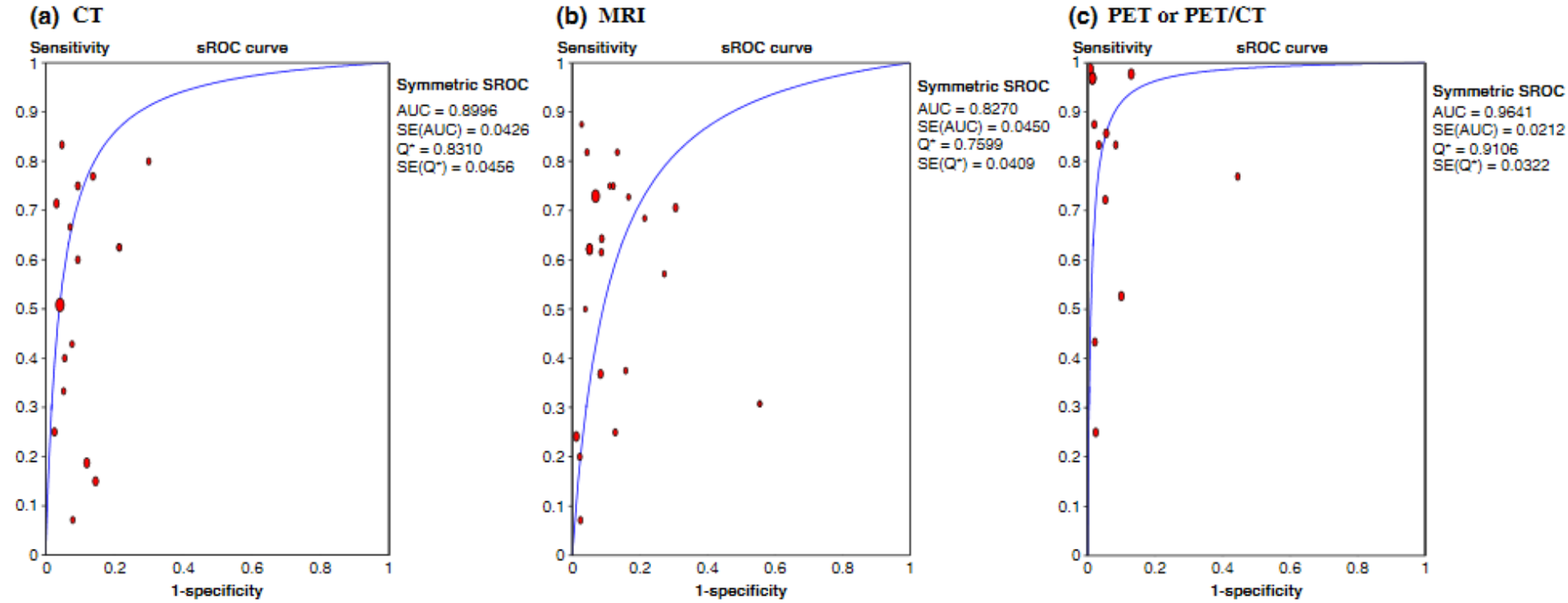
- **Basic imaging (no additonal notation)**
  - Chest X Ray
  - Ultrasound: to diagnose or exclude hydronephrosis, liver lesions, obviously enlarged pelvic and para-aortic lymph nodes, adnexal masses, ascites
  - Skeletal imaging (including bone scans) where symptoms suggestive of bony involvement
  - IVP

- **More extensive imaging (R)**:
  - CT Scan of the abdomen and pelvis (may be used in planning and for diagnostic purposes)
  - CT of the chest if indication based on CXRPET/CT (pre-treatment lymph node assessment)
  - MRI (tumor size, parametrial involvement, lymph nodes, full extent of locally advanced disease, tissue planes)

MRI vs CT vs PET in cervix cancer staging?

Diagnostic performance of CT, MRI, and PET or PET/CT for detection of metastatic lymph nodes in patients with cervical cancer: Meta-analysis
Choi H, et al. Cancer Sci 101:1471-9, 2010

- 41 studies with histologic confirmation



- PET or PET/CT had an overall higher diagnostic performance than did CT or MRI in detecting metastatic lymph nodes in patients with cervical cancer

MRI vs CT vs PET in cervix cancer staging?

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Table 4. Summary sensitivity and specificity of CT, MRI, and PET or PET/CT

Category	No. of studies	Summary sensitivity, % (95% CI)	I^{2}* (%)	Summary specificity, % (95% CI)	I^{2}* (%)
Patient-based comparison					
CT	16	50 (43–57)	71.1	92 (90–94)	31.6
MRI	21	56 (51–62)	70.7	91 (90–93)	80.1
PET or PET/CT	12	82 (75–87)	80.7	95 (93–97)	69.7
Region/node-based comparison					
CT	4	52 (42–62)	78.0	92 (90–94)	81.5
MRI	9	38 (32–43)	67.7	97 (97–98)	95.0
PET or PET/CT	8	54 (46–61)	57.3	97 (96–98)	70.9

*Test for heterogeneity: An I^{2} value greater than 50% was considered to indicate substantial heterogeneity across the studies included in the analysis. CT, computed tomography; MRI, magnetic resonance imaging; PET, positron emission tomography.

- PET or PET/CT had an overall higher diagnostic performance than did CT or MRI in detecting metastatic lymph nodes in patients with cervical cancer

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Comments

- There are several resource-stratified guidelines for the management of cervical cancer that recognize the international disparities in the availability of imaging facilities and equipment. Because of limited imaging technologies in some areas of the world, the committee recognizes the need to be circumspect regarding the various levels of service that can be offered to patients.

- Building on these guidelines, we propose to stratify the prospective collection of imaging data based on the type of technology that might be available—basic or more extensive.

- For the foreseeable future, there will be limitations for imaging findings in limited resourced countries. Therefore, the presence or absence of radiologically identified LNs should be an “add on” rather than part of the core staging, because imaging will be missing in many cases. In addition, there is a problem of false positives-- in HIV epidemic areas imaging may produce false positive lymph node findings.

- All imaging and pathologic findings to be recorded on data collection form, with ultimate plan to refine the staging system based on collected evidence.

- Distinguishing between pelvic and para-aortic nodes is essential in order to faciliate and tailor our adjuvant therapy, i.e., extended field external beam.

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Staging Procedures

Physical examination[a]	Palpate lymph nodes
	Examine vagina
	Bimanual rectovaginal examination (under anesthesia recommended)
Radiologic studies[a]	Intravenous pyelogram
	Barium enema
	Chest x-ray
	Skeletal x-ray
Procedures[a]	Biopsy
	Conization
	Hysteroscopy
	Colposcopy
	Endocervical curettage
	Cystoscopy
	Proctoscopy
Optional studies[b]	Computerized axial tomography
	Lymphangiography
	Ultrasonography
	Magnetic resonance imaging
	Positron emission tomography
	Radionucleotide scanning

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Modify General Staging Pretreatment Work-up

• Current FIGO staging according to 2009 classification allows for EUA, colposcopy, endocervical curettage (ECC), hysteroscopy, cystoscopy, proctoscopy, IVP, Chest x-ray and skeletal x-rays, plus liver, renal blood tests, HIV, and full blood count. We recommend revising and updating this list to confirm to current standard of care.

•Recommendations for 'work up' of women with histological confirmation of invasive cervical cancer prior to decision regarding definitive treatment and prognostication include:

- Blood tests: creatinine, alkaline phosphatase, gamma-GT, Full blood count, HIV (and if positive documentation of HIV status by CD4 Count, Viral Load, Clinical condition as per WHO criteria), syphilis serology

- Routine investigations that have become obsolete or present practical difficulties so that they are seldom practiced should be removed/eliminated for the recommended list.

- This includes routine EUA, IVP, hysteroscopy, proctoscopy, and skeletal surveys, which should only be selectively performed as medically indicated by symptoms.

- Cystoscopy should be guided by symptoms and clinical examination of vulva and vagina and likelihood of bladder involvement as well as timeous access and appropriate equipment.

- Routine surgical assessment of lymph nodes is not recommended.

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Conclusions

- The Staging of Cervical Cancer can be enhanced by updating the tests that are recommended, and by incorporating imaging technologies.

- The first step will be to refine the standard tests, and to accrue data from advanced imaging studies and pathology.

- After more data have been established, the FIGO Staging system should formally incorporate these findings into the system.

Thank You!

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- FIGO permits:
- EUA, colposcopy, endocervical currettage, hysteroscopy,
  - Cystoscopy, proctoscopy, IVP, chest xray, skeletal xrays

- Imaging PET/CT pretreatment for nodal evaluation and to evaluate response 3 months post treatment
  - MRI for evaluation of local tumor extent (eg brachy planning)
  - MRI at first brachy insertion (Image guided brachy)

Rules of 15 and 50 for cervical cancer

Stage	% 5 year survival	% + Pelvic LN	% + PA LN	%LR control (+ PA LN)	% + DM (+PA LN)
I	85	15	50	50	50
II	70	30	50	50	50
III	55	45	50	50	50

No role for unselective, prophylaxis of para-aortic (PA) lymph nodes.

If + PA LN at L2 and above: low cure rate. Palliate or protocol.
If + pelvic LNs consider PA RT.
Resect or boost LN's >3 cm.