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APPLICATION OF REVISED FIGO 2018 STAGING FOR CARCINOMA CERVIX- A SINGLE INSTITUITIONAL STUDY

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ABSTRACT Cervical cancer continues to be one of the most common cancers among females, being the fourth most common after breast, colorectal, and lung cancer[1]. The FIGO 2018 staging system has brought in various pathological and radiological parameters for stage classification to guide treatment related decision making and for better prognostication.

OBJECTIVE: The purpose of this study is to analyse the results of stage redistribution by applying 2018 International Federation of Gynecology and Obstetrics (FIGO) staging system for cervical cancer patients in a tertiary care cancer centre, who were previously staged according to FIGO 2009.

METHODS: Data of all cervical cancer patients who underwent various forms of treatment at our institute including surgery, radiotherapy and chemotherapy from Jan 2013 to Dec 2016 were collected from the Medical Records Department For this study, we re-staged all patients by the FIGO 2018 staging system

RESULTS: The data of patients with carcinoma cervix diagnosed in the 4 years between 2013 & 2016 was tabulated according to both 2009 FIGO staging as well as 2018 FIGO staging. Significant up-staging to Stage IIIC1 & IIIC2 was noted. (Table 1& 2)

CONCLUSION: The current FIGO 2018 staging system for cervical cancer appears to be useful for predicting survival in patients considering radiological and pathological variables. As per our study, majority of the cancer cervix patients fall into a single subgroup – III C1; this, in a country were already most patients present with advanced disease, will skew the data further. Stage III C1 cervical cancer is not homogenous; sub classification within stage IIIC1 may result in better prognostication.

KEYWORDS : Carcinoma cervix, FIGO revised staging 2018

BACKGROUND

Cervical cancer continues to be one of the most common cancers among females, being the fourth most common after breast, colorectal, and lung cancer[1]. In low- and middle-income countries (LMICs), it is more common, being the second most common cancer in incidence among women and the third most common in terms of mortality. The majority of new cases and deaths (approximately 85% and 90%, respectively) occur in low-resource regions or among people from socioeconomically weaker sections of society. New initiatives for prevention and early detection have been undertaken. The two major approaches for control of cervical cancer involve: prevention of invasive cancer by HPV vaccination; and screening for pre-cancerous lesions. With widespread implementation of screening programs worldwide, there has been an increase in the number of early cervical cancers being detected.

The FIGO staging [2] of all gynaecologic cancers was initially clinical. Only certain basic investigations were allowed to change the staging. The reason was the fact that the vast majority, about 85%, occur in low- and middle-income countries (LMICs) which have limited availability of imaging and pathology facilities [2]. However, clinical assessment of staging has several drawbacks—notably, assessment of tumour volume is inaccurate; parametrial involvement may be misdiagnosed; most importantly, lymph node involvement cannot be evaluated by clinical examination. The FIGO 2018 staging system has brought in various pathological and radiological parameters for stage classification to guide treatment related decision making and for better prognostication.

OBJECTIVE:

The purpose of this study is to analyse the results of stage redistribution by applying 2018 International Federation of Gynecology and Obstetrics (FIGO) staging system for cervical cancer patients in a tertiary care cancer centre, who were previously staged according to FIGO 2009.

PATIENTS & METHODS:

Data of all cervical cancer patients who underwent various forms of treatment at our institute including surgery, radiotherapy and chemotherapy from Jan 2013 to Dec 2016 were collected from the Medical Records Department. All patients were staged by the FIGO 2009 criteria, which is based on clinical and imaging criteria (including chest X-ray, CT abdomen & CT or MRI pelvis) and cystoscopy/ sigmoidoscopy as indicated. For this study, we re-staged all patients by the FIGO 2018 staging system. People with incomplete data were not included in the study.

RESULTS:

The data of patients with carcinoma cervix diagnosed in the 4 years between 2013 & 2016 was tabulated according to both 2009 FIGO staging as well as 2018 FIGO staging. Significant up-staging to Stage IIIC1 & IIIC2 was noted. (Table 1& 2). Stage IIIC1 emerged as the most common stage. Downstaging was noted in stage IVB only.

Table 1: Stage Distribution as per FIGO 2009 System:

FIGO 2009 stage	Total No. of Cases between 2013-2016 as per FIGO 2009 staging	Percentage of total cases
IA1	4	0.41
IA2	10	1.01
IB1	39	3.96
IB2	121	12.3
IIA1	29	2.94
IIA2	45	4.57
IIB	236	23.98
IIIA	63	6.4
IIIB	323	32.8
IVA	29	2.94
IVB	85	8.63

Table 2: Stage Distribution as per FIGO 2018 System:

FIGO 2018 stage	Total No. of Cases between 2013-2016 as per FIGO 2018 staging	Percentage of total cases
IA1	4	0.41
IA2	10	1.01
IB1	36	3.66
IB2	35	3.55
IB3	78	7.93
IIA1	23	2.34
IIA2	36	3.66
IIB	153	15.55
IIIA	46	4.67
IIIB	198	20.12
IIIC1	218	22.15
IIIC2	44	4..47
IVA	29	2.95
IVB	74	7.52

DISCUSSION:

The contributions to the new stages IIIC1 is mainly from stages IIIB, IIB & IB2(old). The new stage IB3 is formed from the patients previously classified as IB2. Most of the data was based on radiological

consideration of enlarged pelvic and para- aortic nodes as metastatic even in the absence of histological proof.

FIGO does not specify the modality to be used for imaging, the choice of which is to be based on the available resources and expertise.

Main differences in 2018 FIGO system:

- Stage IB1 Tumor size ≤2 cm
- Stage Ib2 Tumor size >2cm & < 4cm
- Stage IB3 Tumor size ≥4 cm
- Stage IIIC1 Pelvic lymph node metastasis only
- Stage IIIC2 Para-aortic lymph node metastasis

Based upon a recent validation analyses of Matsuo et al. [5] using the National Cancer Institute's Surveillance, Epidemiology, and End Results (SEER) program between 1988–2014, the revised FIGO staging system for cervical cancer is useful to distinguish survival groups. Applying the new system, stage IB1 and stage IB2 disease have distinct characteristics and outcomes, e.g., stage IB1 disease is more likely to be low-grade, and have adenocarcinoma histology, whereas stage IB2 disease is more likely to be high-grade and have squamous histology. Patients with stage IB2 disease are more likely to undergo pelvic lymphadenectomy and radical hysterectomy, while women with stage IB1 disease are less likely to have received postoperative radiotherapy. [7]

A major change in the current staging system is incorporation of lymph node (LN) status into stage III disease. Patients who have documented pelvic and/or para-aortic LN metastasis are specifically designated as stage IIIC. Under the revised system, radiographic and/or histological findings are allowed to assign stage IIIC disease.

Matsuo et al. [5] performed a validation analysis of this new system for classification of stage III disease by utilization of the SEER database. In stage III disease, survival of women with stage IIIC1 disease is greater for those patients with stage IIIA or stage IIIB disease. It is essential to note that stage IIIC1 disease reflects a heterogeneous group of tumors with a wide range of survivals based on local tumor factors: 5-year cervical cancer-specific survival rates were 74.8% for T1, 58.7% for T2, and 39.3% for T3 with a 35.3% difference in absolute survival. Stage IIIC1 cervical cancer is not a single disease entity, and local tumor factors remain the primary determinant of survival.

Nishio et al. [4] showed that the prognosis of women with cervical cancer with extra-pelvic metastasis varies based on metastatic sites outside of the pelvis. Specifically, outcomes for metastatic cervical cancer solely in the paraaortic LNs are superior when compared to cervical cancer metastasized to other extra-pelvic sites. This implies the necessity of distinguishing para-aortic LN metastasis from other metastasis, which is rejected in the 2018 staging system.

In a study[8] from Zhejiang cancer hospital , Hangzhou, China 662 cervical cancr patients who underwent surgery where restage as per 2018 guidelines. On re-staging of patients, 17.3%, 44.5%, 25.4%, and 37.1% of the patients with FIGO 2009 stage IB1, IB2, IIA1, and IIA2, respectively, were upgraded to FIGO 2018 IIIC1P stage, and 2.1%, 3.0%, 3.1%, and 2.1% patients, respectively, were upgraded to IIIC2P stage.

Several controversial issues continue to remain unresolved in the absence of substantial data on their impact on survival, e.g. including the prognostic value of ovarian metastases, presence of isolated tumor cells in nodal metastases & lymphovascular invasion.[3] More importantly, in the revised staging system, assessment of lymph node involvement by radiological methods remains a very subjective decision given the background pelvic inflammatory diseases.

We recognize several limitations in our study. First, this was a retrospective study and had all the inherent limitations of this form of research. Second, consideration of radiological enlargement of pelvic nodes as pathological. Third, all patients were from a single centre and so the results may not be generalizable to all patients.

CONCLUSION:

In conclusion, the current FIGO 2018 staging system for cervical cancer appears to be useful for predicting survival in patients considering radiological and pathological variables.As per our study majority of the cancer cervix patients fall into a single subgroup (IIIC1); this in a country were already most patients present with advanced disease, will skew the data further. Stage IIIC1 cervical cancer is not homogenous; survival in stage IIIC1p varies with the number of metastatic lymph nodes.[8] Efforts should be made to further improve the FIGO staging system. Therefore, we suggest that during the next revision of the staging system, the FIGO committee should take into account the influence of the number of lymph node metastases on survival and prognosis of IIIC1P patients. Also the local advancement (T size) of the disease should be taken into account and stage IIIC1 should be further sub classified. Establishment of pathological staging on a broader scale would definitely add more prognostic value to the current staging system.

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