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**Comparative study of treatment response and toxicity of four field box technique versus two field technique external beam radiotherapy in locally advanced carcinoma cervix**

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**Background:** External beam radiotherapy plays a pivotal role in locally advanced carcinoma cervix. EBRT treats the whole pelvis including the primary tumor along with the regional lymph nodes. Conventionally, EBRT planning is based on standard bony landmarks using X-rays and can be delivered by anterior–posterior and posterior–anterior (AP-PA) parallel opposed fields or the four field box technique. AP-PA field technique provides good coverage to the target volume. Four field box technique with parallel opposed AP-PA fields and two lateral opposed fields although has better dose distribution and decrease normal tissue toxicity, is time consuming. EBRT by AP-PA two field technique is generally used in our center due to less manpower and resources and huge load of patients. But, pelvic radiotherapy by 4 field portals has been proven by the trials that it has better tumor response. So, the objective of this study was to compare the tumor response and acute hematological and non- hematological toxicities between the two techniques.

**Methods:** The study was conducted as prospective hospital based analytical study in one year period in 60 patients. Those patients to be enrolled in the study were subjected to clinical physical examination, cystoscopy, histopathological and laboratory examination to confirm the diagnosis. Clinical examination included performance status, proper general examination, systemic examination and per vaginal / per rectal speculum examination. Radiological examination included x ray chest and USG abdomen and pelvis. The eligibility criteria were age >25 years, eastern cooperative oncology group performance status 0-2, histologically confirmed squamous cell carcinoma, adenosquamous, adenocarcinoma of cervix, tumor classified as International federation of gynecology and oncology staging IIB to IVA and signed informed consent. After fulfilling the eligibility criteria 60 patients were randomized into two groups of chemoradiotherapy with 30 patients in each group. One group received radiation by AP-PA two field technique and the other group by 4 field box technique. Randomization was done alternatively to group A and group B based on the patients visit to OPD. The patients were categorized as group A for the ones receiving treatment by AP-PA two field technique and Group B for the ones receiving treatment by 4 field box technique. Chemotherapy regimen was the same for the two groups. Treatment response and toxicities were evaluated after the completion of treatment and compared between two groups.

**Results:** 100% of enrolled patients received planned treatment. The total duration of treatment in both the groups was 23 days. Locoregional control with complete remission was 63.3 % in group A Vs. 73.3% in group B (p= 0.405). Acute toxicities of grade 1 and grade 2 were seen more in group A compared to group B, nausea (63.3% vs. 56.7% p=0.141), vomiting (13.3% vs. 20% p=0.234), diarrhea (10% vs. 6.7%), radiation dermatitis (3.3% vs. 0%). Hematological toxicities like anemia, thrombocytopenia and leucopenia were observed more in group A than group B.

**Conclusion:** Both two and four field box techniques are equally effective and feasible as statistically insignificant difference in the response rate and acute toxicities was observed in the two groups. External beam radiation therapy can be still be practiced by two field technique in locally advanced carcinoma cervix when compared to four field box technique.

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