Cervical cancer

Poster (C01)

Cervical Cancer

<https://doi.org/10.3802/jgo.2021.32.S1.C01>

Dosimetric comparison of single 6MV, single 10MV, and mixed 6MV plus 10MV energy volumetric modulated arc therapy for cervical cancer

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Objective: Volumetric Modulated Arc Therapy (VMAT) in the pelvic and groin lymph node irradiation is generally employed with single energy photon. Due to the different depth of target volumes, the mixed energy photon VMAT could produce better dose distribution since the higher dose energy photon penetrates more to deep-seated tumors and the lower dose energy photon better covers superficial targets. This pilot study compares the dosimetric parameters generated from mixed energy 6MV plus 10MV VMAT plan and single energy of 6MV and 10MV VMAT plan.

Methods: Ten cervical cancers with lower one-third vaginal involvement patients were selected. The dose of planning target volume (PTV)-pelvis and PTV-gross lymph node was 45 Gy (PTV-45) and 55 Gy (PTV-55), respectively. VMAT using 6MV, 10MV, and mixed energy 6MV plus 10MV were generated with identical plan objectives. Dosimetric parameters of PTV and organ at risks were compared.

Results: Almost parameters showed no statistically significant difference among three different energies. For exception, the dose coverage 98% of PTV-45 of mixed energy was significantly higher than of 10MV. The dose coverage 98% of PTV-55 of mixed energy was significantly higher than of 10MV. The Homogeneity Index of PTV-45 of 6MV was significantly better than of 10MV. The mean dose of external genitalia of 6MV was significantly less than of mixed energy.

Conclusion: The mixed energy 6MV plus 10MV VMAT plan in the pelvis with inguinal lymph nodes irradiation for cervical cancer did not show explicit benefit in term of dosimetric outcomes, compared to single energy.

Poster (C02)

Preinvasive Disease of Cervix, Vulva, and Vagina

<https://doi.org/10.3802/jgo.2021.32.S1.C02>

Epigenetic and genetic characteristics of intraepithelial neoplasia of cervix

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Objective: The aim is to identify the genetic and epigenetic factors of intraepithelial neoplasia atypical squamous cells of undetermined significance (ASC-US) or low-grade squamous intraepithelial lesions (LSIL) with high-risk human papilloma virus (HPV) that lead to cancer.

Methods: We selected the patients who diagnosed ASC-US or LSIL of cytology with high-risk HPV infection and followed up at every 6-months intervals. According to the final cytology and HPV test results, the patient group was divided into regression, persistence, and progression and analyzed. DNA extracted from initial and final cytology and matching normal DNA (peripheral blood) were conducted Microsatellite instability (MSI) and MLH1 methylation by real time polymerase chain reaction kit (U-TOP MSI Plus Detection Kit, Epi-TOP mMLH-1 detection Kit, Seasun Biomaterials, Daejeon, Korea). If the sample was insufficient, analyzing of the final sample was omitted.

Results: Of 34 patients, 19 patients were regressed their lesion, 10 patients were noted persistent HPV infection. The average age at first diagnosis was 39.8±10.6 years. Among 5 patients, their lesions had been progressed and got surgical resection to be removed. The final pathology results were reported high-grade squamous intraepithelial lesions. All 63 cervical cytology samples went through MSI and MLH1 methylation analysis. Regardless of patients group, all samples were microsatellite stable and negative of MLH1 methylation.

Conclusion: Whether the outcome of HPV infection was progression, persistence or regression, there were no significant difference of MSI, MLH1 methylation in DNAs extracted cytology. More studies conducted in tissues other than cytology and studies with expanded number of patients are needed.

Poster (C03)

Gynecologic Pathology, Genetics and Epidemiology

<https://doi.org/10.3802/jgo.2021.32.S1.C03>

HER2 overexpression and PD-L1 expression in vulvar Paget disease in Thai population: role of potential targeted and immune therapy

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Objective: To determine the proportion of human