IS PRIMARY CHEMORADIATION A BETTER TREATMENT? A RETROSPECTIVE STUDY OF EARLY STAGE NODE-POSITIVE CERVICAL CANCER

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Introduction/Background Cervical cancer is the second most frequently diagnosed cancer and the third leading cause of cancer death for women in developing countries. Radical hysterectomy with bilateral pelvic lymph node dissection is usually preferred for patients of stage IB1-IIA2. Currently, image examinations have certain limitations in diagnose of lymph node metastasis and their detection accuracies are not satisfactory. Only the pathological examination after removal of the suspected metastatic lymph nodes during surgery can conclusively identify the presence of metastasis. If there is a positive result of lymphatic metastasis, there is no clear guideline whether to complete a radical surgery, or to only conduct a systematic lymphadenectomy, followed with adjuvant Concurrent Chemoradiotherapy (CCRT). This retrospective study aimed to compare the efficacy and safety of the two treatment modalities.

Methodology 49 stage IB1-IIA2 cervical cancer patients with lymphatic metastasis confirmed by systemic pelvic and para-aortic lymph node dissection from 2007 to 2018 were reviewed. The patients were treated with either primary chemoradiation or radical hysterectomy followed by adjuvant chemoradiation after lymphadenectomy. Survival states and adverse events of the two treatments were compared.

Results Median follow-up time was 45 (range 11–119 months) months. In non-radical surgery group, 1 patient (1/15, 6.7%) relapsed and died, while in radical surgery group, 7 patients (7/27, 25.9%) relapsed and 5 (5/27, 18.5%) died. Significant difference was found in the mean progression-free survival between the two groups, which was 69(95%CI 49.118–88.882) months in non-radical surgery group and 44(95%CI 35.857–52.143) months in radical surgery group ($p < 0.01$). There was significant difference in three-year progression-free survival (86% vs. 71%, $p < 0.01$). Grade 3–4 toxicity was comparable between the two groups (26.7% vs. 25.9%, $p = 0.958$).

Conclusion For stage IB1-IIA2 cervical cancer patients with positive lymph node, primary chemoradiation after pelvic and para-aortic lymphadenectomy seems to have better survival outcomes compared with radical hysterectomy by laparoscopy plus chemoradiation in the retrospective study with limited cases. Evidence from a randomized controlled study is in need to confirm the optimal treatment for early stage node-positive cervical cancer.

Disclosures The authors declare that they have no conflicts of interest.

USP18 PROMOTES CELL PROLIFERATION AND SUPPRESSED APOPTOSIS IN CERVICAL CANCER CELLS VIA AKT SIGNALING PATHWAY

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Introduction/Background Cervical cancer is one of the most common malignancies in women worldwide. USP18 (USP43), a member of Ubiquitin-specific protease family, has been linked to several human malignancies except cervical cancer. The current study aimed to explore the expression and possible role in cervical cancer.

Methodology Real-time PCR and immunohistochemical staining was performed to analyze USP18 expression in cervical cancer tissues and normal tissues. USP18 expression was manipulated in cervical cancer cell lines, and its biological function in cell proliferation and apoptosis was assessed by Cell Counting Kit-8 assay and Annexin V/PI staining, respectively.

Results We demonstrated that USP18 expression was increased in cervical cancer specimens and cell lines. Knocking down of USP18 in cervical cancer cell lines, SiHa and Caski, inhibited cell proliferation, while induced apoptosis and the expression of cleaved caspase-3. On the contrary, USP18 overexpression showed reversed effects in Hela cells. Moreover, Gene Set Enrichment Analysis showed that USP18 expression level was correlated with PI3K/AKT signaling pathway in cervical cancer. Further, the PI3K/Akt inhibitor LY294002 blocked the effects of USP18 overexpression on cervical cancer cells.

Conclusion The current study indicates the oncogenic role of USP18 in cervical cancer, which will deepen the understanding in the pathogenesis of cervical cancer and may provide a novel target for cancer therapy.

INFLUENCE OF INITIAL VOLUME OF CERVICAL CANCER ON ACHIEVING THE RECOMMENDED BRACHYTHERAPY DOSE AT TARGET VOLUMES

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Introduction/Background 3D brachytherapy (BRT) planning, based on magnetic resonance (MR) imaging, has become a standard approach in cervical cancer radiotherapy treatment in many radiotherapy centres. T2W MR images give us precise visualization of the tumor tissue volume and tumor changes during the treatment. Adequate BRT dose coverage of the target volumes, presented through D90 and D100 dose parameters, has a primary role in achieving local control of the disease.

The goal is to estimate the initial tumor volume impact on the registered target volume dose parameters.

Methodology The curative chemoradiation was applied to 30 patients with advanced cervical cancer. Brachytherapy was performed in a high-dose rate regimen, in 4–5 weekly applications, with a dose of 7Gy per application, starting after 15 external beam fractions, endocavitary without interstitial catheters. For each patient a 3D T2W MR imaging was performed, initially prior treatment and at the time of the first and the fourth BRT application. MR images were used for tumor volume assessment and for 3D BRT planning, obtaining that way the target dose-volume parameters. Initial tumor volume influence on the registered HR-CTV dose parameters (clinically the