

Guidelines for Clinical Implementation of LATTICE Radiotherapy for the Treatment of Unresectable Bulky Uterine Cervical Cancer

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Abstract
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Abstract

Objectives:

To establish a standardized protocol for Lattice Radiotherapy (LRT) for bulky loco-regionally advanced uterine cervical cancer. The proposed guidelines will include: adequate patient selection, detailed simulation and treatment planning recommendation, and strict dosimetric parameters to be reported in order to compare data.

Methods:

The LRT protocol is based on our experience of more than a decade of using LRT for voluminous cervical cancer and in the previously published International Consensus on the Design of prospective SFRT clinical trials for advanced gynecological cancer.

Results:

Patients with a tumor size of at least 4 cm will be included. Simulation will follow radiosurgery guidelines. The course of treatment will be delivered in three phases:

Phase 1: LRT Boost

Five fractions of 8 Gy to the vertebrae, 2 Gy to the periphery of tumor, and valley dose under 5 Gy.

Phase 2: Pelvic RT

Dose of 45 Gy in 1.8 Gy per fraction with integrated boost to the PET+ lymph nodes.

Phase 3: Residual disease

Additional radiation or surgery.

Treatment time should not exceed 49 days with adaptive RT when needed.

Contouring, planning, and treatment delivery procedures will be outlined.

Conclusion(s):

Our preliminary results of using three LRT fractions of LRT combined with chemo-radiation for patients with bulky cervical cancer have demonstrated a complete tumor response of 70% with no grade 3 or 4 toxicity reported. The current protocol proposes a dose escalation using five LRT fractions as an upfront boost. The results regarding tumor control probability using this regimen are expected to be of at least 85%. Implementation of the standardized LRT protocol may lead to response rates evaluation between different institutions.