AbstractID: 5368 Title: Output verification and clinical implementation of Leipzig Applicators for treating small skin lesions by HDR-brachytherapy using multiple dosimetry systems

Purpose: The purpose of this paper is to provide a guide to commissioning the Nucletron Lepzig Applicators in a clinical setup for treating small surface lesions using HDR brachytherapy.

Method and Materials: Recently we have acquired a set of six Leipzig Applicators (3 Horizontal applicators with inner diameters 1 cm, 2 cm and 3 cm and 3 Vertical with same diameter sizes) for our microselectron-HDR V2 afterloader. Initially we have measured dose rates for 3 Horizontal applicators using Standard Imaging Exradin A10 parallel plate ion chamber and films (gafchromic and EDR2). Since the sensitive area of this ion chamber is comparable to the effective field area for the smaller 1 cm diameter applicators we felt the necessity to verify the dose rates using gafchromic films as well as EDR2 film. We have also used MOSFET and a micro parallel plate chamber (Exradin A14P, provided by Standard Imaging) and small cylindrical chambers (Exradin A1SL,and A14SL) for independent verification of our measurements.

Results: To implement these applicators for clinical use we measured surface dose rates and depth dose rates for each applicators using variety of dosimetry. We subsequently developed an Excel Spreadsheet program to compute dwell time for a given prescription and to print a plan report documentation for the treatment.

Conclusion: In this presentation we compare our data with published data and describe the details of clinical implementation of these applicators.

Conflict of Interest (only if applicable):