Thesis Title A Programme For Calculation of Intracavitary Dose Delivered by Ralstron CO-60 Afterloading Unit

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ABSTRACT

The treatment of cervix cancer by intracavitary method supplemented to external beam therapy provided a satisfactory result. The high radiation dose of Cobalt-60 source pellet had been used for the intracavitary insertion by the "RALSTRON" equipment. The computer planning program is neccessary to be accomplished for the expedized accurated calculation of treatment time of insertion. Interval method of calculation is used to calculate the dose from each Co-60 source capsule. Assuming each pellet of source in a capsule is a point source, the absorbed dose to any specified point in the standard table can be calculated. These standard table is obtained as a function of COSINE of the angle between the central axis of the source capsule and Radial distance from center of source capsule. The calculation of treatment dose had been done by computing the COSINE and distance using the standard table for the dose at each point. The standard table of individual source type had been used for supporting this calculation. The DOSEPAC-100 computer planning system is recognized as a gold standard. It was observed that the difference of the result between our developing program against the DOSEPAC-100 system is about $\pm$5%(1). Isodose distribution output showed the same pattern as standard isodose distribution of source, in the certificate of RALSTRON source.