Prostate

GEC-ESTRO ACROP Prostate Brachytherapy Guidelines

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Abstract

This is an evidence-based guideline for prostate brachytherapy. Throughout levels of evidence quoted are those from the Oxford Centre for Evidence based Medicine (https://www.cebm.ox.ac.uk/resources/levels-of-evidence/oxford-centre-for-evidence-based-medicine-levels-of-evidence-march-2009). Prostate interstitial brachytherapy using either permanent or temporary implantation is an established and evolving treatment technique for non-metastatic prostate cancer. Permanent brachytherapy uses Low Dose Rate (LDR) sources, most commonly I-125, emitting photon radiation over months. Temporary brachytherapy involves first placing catheters within the prostate and, on confirmation of accurate positioning, temporarily introducing the radioactive source, generally High Dose Rate (HDR) radioactive sources of Ir-192 or less commonly Co-60. Pulsed dose rate (PDR) brachytherapy has also been used for prostate cancer [1] but few centres have adopted this approach. Previous GEC ESTRO recommendations have considered LDR and HDR separately [2-4] but as there is considerable overlap, this paper provides updated guidance for both treatment techniques. Prostate brachytherapy allows safe radiation dose escalation beyond that achieved using external beam radiotherapy alone as it has greater conformity around the prostate, sparing surrounding rectum, bladder, and penile bulb. In addition there are fewer issues with changes in prostate position during treatment delivery. Systematic review and randomised trials using both techniques as boost treatments demonstrate improved PSA control when compared to external beam radiotherapy alone [5-7].