

## **A Study of Five Treatment Techniques for Prostate Carcinoma**

Radiation therapy for prostate carcinoma has been routinely performed with different field assignments. This study includes five patients whose tumor volume is prostate only. The prostate volumes range from 35 to 99 cc. Five treatment techniques are evaluated on each patient for comparison studies. These treatment techniques are designed as open field bilateral arcs; four-field box with partially blocked lateral fields to rectum and bladder; bilateral arcs with conformal blocks; four-field box with conformal blocks and six coplanar fields with conformal blocks. We studied the mean dose to the rectum, bladder and femoral heads, as well as the percentage of high dose volume to the critical organs. The study found that bilateral arcs, four-field box and six coplanar fields treatments, all including conformal blocking, deliver almost the same low mean dose to rectum, bladder and femoral heads. Furthermore, bilateral arcs and six coplanar fields, both with conformal blocking, can reduce the high dose volume to the femoral heads significantly. Of these two techniques, bilateral arcs with conformal blocking is easier to plan and treat as compared to the six coplanar field technique with conformal blocking. This simplicity of setup promotes high degree of quality control and cost effectiveness.