

**PP-51**

**Kidney cancer treated by radiosurgery**

**A. Lederman**, B. Gilson, G. Qian, L. Cangiane, E. Dimino

*Radiosurgery New York, New York, NY, USA*

**Aims & Objectives:** Kidney cancer has been historically thought to be a radioresistant cancer. We analyzed hypofractionated stereotactic radiosurgery for treatment of both primary and metastatic kidney cancers.

**Materials & Methods:** 204 kidney cancer sites were treated in an 8 year period. All were evaluated before and after treatment. Of the 204 sites, 33 were located in the kidney itself. The remainder, 171 sites, were metastatic but excluded the brain in this analysis of extracranial radiosurgery. Of patients with primary kidney cancer, the age range was 31 to 85 years, mean 62 years, with 33 cancers treated. The volume of primary kidney cancers ranged from 2.4 to 1366cc with a mean of 356cc.

The extracranial metastasis treated numbered 171 with a volume range of 0.06cc to 3166cc and a mean of 165cc. The age range of these patients was 31 to 84 years with a mean of 61 years. The cancers received a dose of 1200 to 6000cGy with a median of 4000cGy. Patients were treated with a mean of 5 fractions ranging from 2 to 10 fractions. All cancers were radiographically evaluated with contrast studies and reviewed by a multidisciplinary panel. Control of the treated cancer is defined as cessation of growth, shrinkage or disappearance of the cancer after treatment.

**Results:** The cumulative control rate for all extracranial kidney cancers treated was 87%. The control rate for primary kidney cancers was 94%. In that group the follow up ranged from 2 to 73 months with a mean of 17 months. For the primary kidney cancers treated with a volume <196.48cc the control rate was 88%. Of the 17 kidney cancers with a volume  $\geq 196.48$ cc the control rate was 100%. Of extracranial metastasis treated the control rate was 87%. Follow up ranged from 1 to 73 months with a mean of 10 months. For our analysis by volume of extracranial metastatic kidney cancers our control was 86% in the 101 cancers having a volume <37.3cc. Of the 70 sites with a volume  $\geq 37.3$ CC the control rate was 89%. Analysis of dose and volume showed no statistical difference. The treatment was well tolerated.

**Conclusion:** Kidney cancer, when treated with large doses per fraction of radiation appears to be radiosensitive, not radioresistant. Radiosurgery offers patients a high control rate for both primary and extracranial metastatic kidney cancers. The treatment is an alternative for individuals who are not candidates or unwilling to undergo surgical resection of their tumors. Radiosurgery has shown to deliver a high control rate while avoiding complications associated with other modalities of treatment.