# CYBERKNIFE ROBOTIC RADIOSURGERY FOR LIMITED LIVER METASTASES IN THREE FRACTIONATION

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***Purpose :*** To determine the feasibility and efficacy of 60 Gy/3 fractions with Cyberknife image-guided robotic stereotactic radiosurgery for limited liver metastases .

***Materials and Methods :*** Between 2009 to 2011, a total of 7 patients with inoperable, limited numbers of liver metastases underwent Cyberknife image-guided robotic stereotactic radiosurgery at our center. Follow-up time ranged from 5-25 months (median: 17 mo.). Four patients had a solitary lesion and 3 had small multiple lesions (less than 3 nodules), the maximum tumor diameter ranged from 1.5 cm. to 5 cm. Primary tumor sites were rectal cancer (n= 2), lung Cancer (n= 2), pancreatic cancer (n= 1), renal cell cancer (n= 1), bladder cancer (n= 1). The ages ranged from 60-87 years old. The patients were treated with 60 Gy delivered in 3 fractions given every other day. Isodose value range from 75-80% of the prescribed dose.

***Results :*** A follow-up CT-scan of the abdomen done 3 months after Cyberknife image-guided robotic stereotactic radiosurgery showed complete response was attained in 3 patients and partial response in 4 patients. Six months after the treatment all patients achieved a complete tumor response. Only 1 patient shown grade 1 acute liver and gastrointestinal toxicity. No severe complication was attributed to the therapy. The 1-and 2-year overall survival rate was 71.4 % and 42.8%, respectively. Median survival was 17 months (6-26 months) [95% CI 6.75-27.26], and median progression-free survival was 9 months (5-26 months) [95% CI 1.3-16.7].

***Conclusion :*** Cyberknife image-guided robotic stereotactic radiosurgery in 60 Gy/3 fractions for limited liver metastases is feasible and effective. Excellent local control can be achieved with minimal toxicity. While our data established the safety of this treatment, more rigorous clinical studies are needed to fully evaluate long term efficacy and toxicity results.

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