



Neo-adjuvant chemotherapy combined with radio-frequency ablation does not improve survival as compared to surgical resection for liver malignancy



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*UMDNJ-NJMS, Newark, NJ; †Hackensack University Medical Center, Hackensack, NJ

Background

While several studies have looked at radiofrequency ablation (RFA) compared to surgical resection for malignant liver disease (MLD), there is insufficient data when neoadjuvant chemotherapy (NC) is used prior to RFA. This study compared use of NC prior to operative RFA and surgical resection for MLD.

Methods

A retrospective review was conducted to determine survival outcomes after treatment of patients with known MLD over an eight year period from 2000 to 2008. Demographic, pathologic, and survival data was recorded and analyzed by an independent statistician. Survival analyses were calculated using Kaplan Meier methods and the log-rank test.

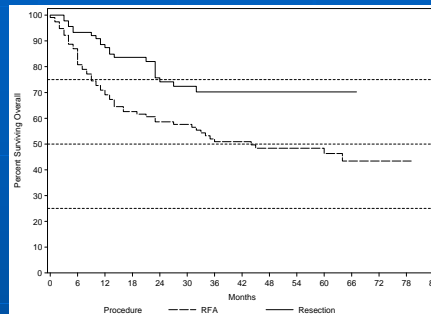
Results

214 patients were identified having undergone treatment for either primary or metastatic liver malignancy. The disease processes included 166 patients with metastatic disease of which 95 had confirmed colorectal disease (CRC) and 48 patients with hepatocellular carcinoma (HCC). 115 patients (27 with HCC and 88 with metastatic disease including 44 with CRC) received neoadjuvant chemotherapy followed by ultrasound guided intraoperative radiofrequency ablation either alone or with resection (NCRFA) while the remaining 99 patients (21 with HCC and 78 with metastatic disease including 51 with CRC) were treated with a surgical resection alone (resection). Average follow-up was approximately 30 months and ranged from 0-76 months.

Demographics

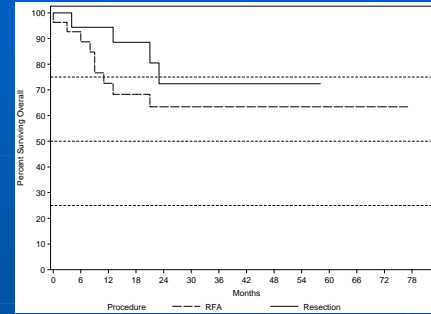
With the exception of the RFA patients having a significantly older mean age (64 vs 61, P=0.04). The study groups did not otherwise differ significantly in regards to number and size of tumors or sex.

Resection vs. NCRFA for all patients



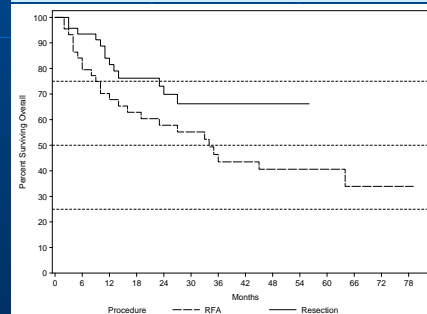
Patients who received resection as treatment for malignant liver disease had significantly better 5-year survival (70%) than those treated with NCRFA (46%). (p<0.005)

Resection vs. NCRFA for HCC



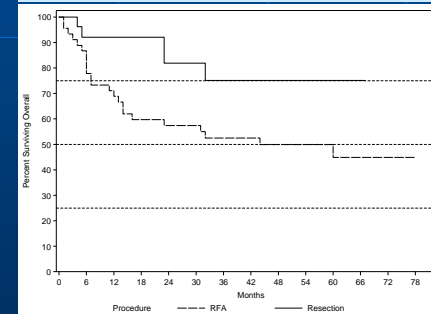
Patients with hepatocellular carcinoma (HCC) had equivalent 4-year survivals when comparing resection to NCRFA (72% vs. 63%, respectively). Our data does not indicate a trend (p=0.3)

Resection vs. NCRFA for CRC



While patients with colorectal cancer (CRC) showed no statistically significant difference in survival at 4 years when comparing resection to RFA (66% vs 40% respectively), there was a trend indicating survival improvement after resection (p=0.066).

Resection vs. NCRFA for Non-CRC metastases



The 5-year survival of patients with non-colorectal metastatic cancer (non-CRC) is significantly longer with resection as compared to NCRFA (75% vs. 45%, respectively) (p<0.05)

Conclusion

Our survival data is consistent with published survival data for both RFA and resection. Patients who underwent resection of malignant liver disease had significantly longer overall survival as compared to patients who had neoadjuvant chemotherapy followed by RFA. When analyzed by disease process, this significance was only manifested in non-colorectal cancer metastases, though resection for colorectal cancer metastases showed a trend toward better survival over NCRFA. Like the overall survival, this is consistent with the published data comparing resection to RFA. The addition of neoadjuvant chemotherapy to the treatment arm of the RFA group does not appear to significantly alter results as compared to published data. The study, however, was not designed to demonstrate survival of NCRFA vs. RFA alone. Of interest is the non-significant survival difference between treatment modalities for patients with HCC. Our data showed neither significance nor a trend toward improved survival for either resection or NCRFA. This is consistent with several randomized a non-randomized prospective trials in the literature.

This data further illustrates the need for prospective trials comparing RFA to resection for MLD. Our data indicates no significant difference or trend between CRC and non-CRC metastatic disease between resection and RFA (resection improves overall survival). For this reason we feel that making a distinction between these disease processes may not be necessary. In addition, a prospective study is needed to further evaluate any potential benefit to NCRFA vs. RFA alone for HCC.

References

1. Carreau, et al. Radiofrequency ablation of primary and metastatic liver tumors: a critical review of the literature. *Am J Surg* 2005;190:288-323.
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5. Sorensen, et al. Survival after radiofrequency ablation of colorectal liver metastases 10 year experience. *Ann Surg* 2007;245(5):649-657.
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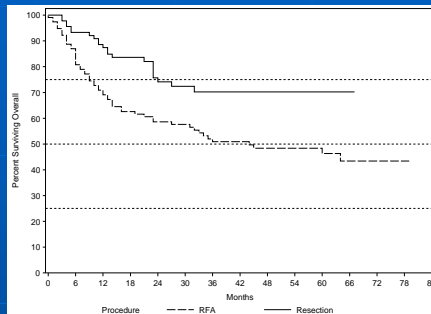
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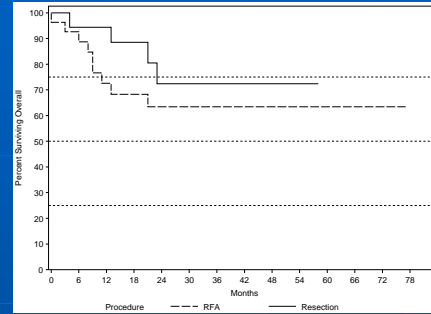
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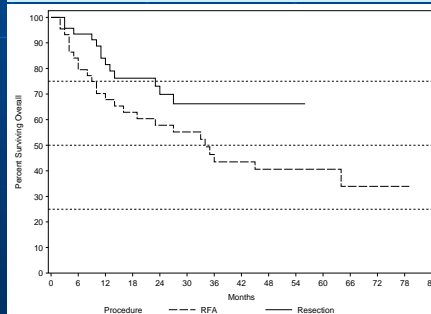
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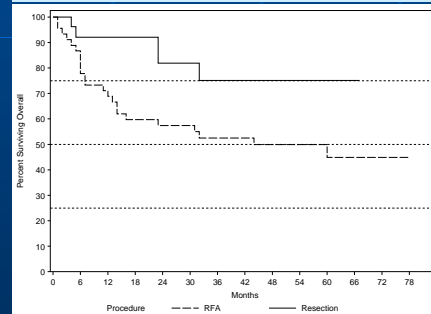
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