

Clinical Score for Predicting Recurrence After Hepatic Resection for Metastatic Colorectal Cancer

Analysis of 1001 Consecutive Cases

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Objective

There is a need for clearly defined and widely applicable clinical criteria for the selection of patients who may benefit from hepatic resection for metastatic colorectal cancer. Such criteria would also be useful for stratification of patients in clinical trials for this disease.

Methods

Clinical, pathologic, and outcome data for 1001 consecutive patients undergoing liver resection for metastatic colorectal cancer between July 1985 and October 1998 were examined. These resections included 237 trisegmentectomies, 394 lobectomies, and 370 resections encompassing less than a lobe. The surgical mortality rate was 2.8%.

Results

The 5-year survival rate was 37%, and the 10-year survival rate was 22%. Seven factors were found to be significant and independent predictors of poor long-term outcome by multivariate analysis: positive margin ($p = 0.004$), extrahepatic dis-

ease ($p = 0.003$), node-positive primary ($p = 0.02$), disease-free interval from primary to metastases <12 months ($p = 0.03$), number of hepatic tumors >1 ($p = 0.0004$), largest hepatic tumor >5 cm ($p = 0.01$), and carcinoembryonic antigen level >200 ng/ml ($p = 0.01$). When the last five of these criteria were used in a preoperative scoring system, assigning one point for each criterion, the total score was highly predictive of outcome ($p < 0.0001$). No patient with a score of 5 was a long-term survivor.

Conclusion

Resection of hepatic colorectal metastases may produce long-term survival and cure. Long-term outcome can be predicted from five criteria that are readily available for all patients considered for resection. Patients with up to two criteria can have a favorable outcome. Patients with three, four, or five criteria should be considered for experimental adjuvant trials. Studies of preoperative staging techniques or of adjuvant therapies should consider using such a score for stratification of patients.

Surgical resection is the most effective therapy for metastatic colorectal cancer isolated to the liver. Several studies from major centers have demonstrated that resection of as much as 80% of the liver can be performed with an asso-

ciated surgical mortality rate uniformly less than 5%.^{1–6} Complete resection of detectable liver metastases results in 5-year survival for one third of patients.^{1–6} The study by Scheele et al¹ reporting the experience of 434 liver resections for metastatic colorectal cancer from the University of Erlangen over a 32-year period between 1960 and 1992 documented a 10-year survival rate of 23% and a 20-year survival rate of 18%. Hepatic resection, therefore, is a safe and effective therapy for metastatic colorectal cancer and is the only therapy to date to be potentially curative. When compared with the natural history of this disease—untreated patients have a median survival of 6 to 12 months,^{7,8}

Presented at the 119th Annual Meeting of the American Surgical Association, April 15–17, 1999, Hyatt Regency Hotel, San Diego, California. Supported in part by NIH grants RO1CA76416, RO1CA72632, and RO1CA61524 (YF).

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Accepted for publication April 1999.