

Transarterial Chemoembolization Versus No Intervention or Placebo Intervention for Liver Metastases

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Objective

To assess the benefit and harm of transarterial chemoembolization treatment when compared to no intervention or a placebo intervention for patients with liver metastases.

Type of Review

A review containing one randomized clinical trial. Because the review contained a single study, limited analysis could be undertaken.

Relevance for Nursing

Liver metastasis is a significant problem for patients diagnosed with primary liver tumors or tumors that are secondary to colorectal carcinoma, with approximately half of these patients developing metastatic liver complications. Metastatic liver disease remains one of the leading causes of death among patients with malignant carcinoma, with the progressive involvement of the liver determining long-term survival.

The therapeutic treatment of surgical resection is an option for patients with malignant liver metastasis; however, only 20% of patients with hepatic tumors are suitable for surgical resection compared to others who are in the extensive stages of liver metastasis. Because of this, patients often choose chemotherapy or ablative techniques as methods of treatment.

With the introduction of transarterial chemoembolization procedures, the hepatic artery that supplies blood to the liver tumors is assumed to be necrotized, which leads to the liver tumors dying without affecting the normal organ tissues. This intervention is anticipated to

improve short-term side effects (e.g., nausea, vomiting, fatigue) among patients with malignant liver metastasis.

Characteristics of the Evidence

The included study contained a total of 61 patients (43 men and 18 women) with colorectal liver metastases, regardless of the location of primary tumor. Participants were randomized into three intervention groups.

Twenty-two patients received hepatic artery embolization, 19 received hepatic artery chemotherapy infusion, and 20 were randomized to a control group that did not receive an active intervention but were treated for their symptoms when appropriate. However, the types of symptomatic treatments provided to the participants were not reported.

The primary outcomes of interest were mortality at the last follow-up, time frame to mortality, adverse events that led to death, life-threatening events requiring hospitalization, significant disability, and quality of life. Secondary outcomes measured included the proportion of patients with recurrence, time to progression of liver metastasis, and tumor response measures (i.e., disease progression). For methodologic quality, the trial did not describe sequence generation, allocation concealment, or blinding processes. The risk of bias was noted as high.

Summary of Key Evidence

Patients were followed up for a minimum of seven months. The last follow-up mortality rate was 86% in the hepatic artery embolization group and 95% in the control group, indicating no statistically significant difference. The relative risk (RR) was 0.91 (confidence interval [CI] [0.75, 1.1]). Given that the RR was based on a singular study, the result was calculated using the Mantel-Haenszel test and checked with Fisher's exact test ($p = 0.608$), which confirmed that the difference was not statistically significant.

The median survival of patients after entering the trial was 7 months in the hepatic artery embolization group and 7.9 months in the control group, indicating that the difference was not statistically significant.

Forty-one percent of the hepatic artery embolization group and 25% of the control group developed evidence of extra-hepatic disease. The RR was calculated to be 1.64% (95% CI [0.6, 4.07]). Eighty-two percent of patients in the embolization group experienced a postembolic syndrome event with one patient reporting a local hematoma. No other adverse events were reported in the control and intervention groups.

No significant benefit was demonstrated for the proportion of patients with recurrence in the embolization group when compared to the control or intervention groups. Quality of life, time

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