Incremental Cost-Effectiveness Analysis of Hepatic Metastasectomy in Patients with Advanced Colon Cancer and Liver Metastasis

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Background: Colorectal cancer with liver metastasis is a potentially curable malignancy. Liver metastasectomy required specialized centers having expertise, resources, and some awareness which consume significant amount of hospital budgets. We aimed to evaluate the cost-effectiveness of hepatic metastasectomy in patients with advanced colon cancer with liver metastasis.

Method: Medical records of advanced colon cancer patients with liver metastasis only who treated at the King Chulalongkorn Memorial Hospital during January 2007 to 31 December 2010 were reviewed. The study endpoint is to compare the cost per life-year gained in term of incremental cost-effectiveness ratio (ICER) between with or without hepatic metastasectomy by the decision model.

Results: There were 34 patients in liver surgery group and 28 patients in without surgery group. There was significantly longer median survival time in the surgery group vs no surgery, 42.22 vs 18.04 months, respectively (HR=23.3, P<0.001). Individual mean cost per patient was higher in the surgery group at 1,975,349 baht/case compared to no surgery group at 1,451,028 baht/case. The ICER of liver surgery over no surgery was 247,150 baht per life-year gained which is lower than the threshold derived from the national gross domestic product per capita.

Conclusion: Under the routine clinical service, hepatic metestasectomy is a cost-effective option for patients with colon cancer with liver only metastasis in the tertiary care hospital setting.