OBJECTIVES: To evaluate the clinical effectiveness of sorafenib and sunitinib in metastatic renal cell carcinoma (RCC) by using indirect comparison meta-analysis. METHODS: PubMed, Embase, Cochrane, and Cochrane databases were searched. All randomized clinical trials of sorafenib or sunitinib versus interferon alpha for treating metastatic renal-cell carcinoma were included. Study selection, data extraction and quality assessment were performed by two reviewers with disagreements being resolved by consensus. The effects of sorafenib and sunitinib on progression-free survival were compared indirectly using indirect treatment comparison protocol, with interferon alpha (IFN) as a common comparator. RESULTS: Two studies were included. Median progression-free survival was prolonged with the treatment of sunitinib (11 months) compared to interferon alpha (5 months). For the comparison of sorafenib and interferon-alpha, the median progression-free survival was similar (median PFS: 5.7 months vs. 5.6 months). Indirect comparison suggests that sunitinib is not superior to sorafenib for prolongation of progression-free survival (hazard ratio 0.37; 95% CI: 0.236–0.58, P = 0.019). CONCLUSIONS: There is no significant evidence from this study that treatment with sorafenib has clinical advantages over treatment with sunitinib in patients with metastatic RCC.

RISK OF BREAST CANCER AMONG USERS OF POSTMENOPAUSAL HORMONE REPLACEMENT THERAPY IN TAIWAN

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OBJECTIVES: To determine whether the association between the different dosage of hormone replacement therapy (HRT) and the incidence of breast cancer (BC) in postmenopausal women with HRT formulation. METHODS: Patients who had at least one outpatient visit for postmenopausal syndrome (ICD-9-CM code 627) with estrogen prescription in Taiwan National Health Insurance (NHI) claims database during 1999–2006 were identified as the study cases. There were 883,052 women identified from the database. The index date was defined as the date of the first menopausal visit with estrogen prescription during the study period. To identify any BC events, each case was tracked from the index date until December 31, 2006 or death, whichever came first. Women without events were censored on December 31, 2006. Survival analysis was performed to assess whether cumulative estrogen dosage and combined progesterone were independent risk factors of BC. RESULTS: A total of 5324 cases of BC were identified during the study period. Women with higher dosage of estrogen had significantly higher risk of BC than women with lower dosage (HR = 2.23, P < 0.0001). The risk of BC was even higher when progesterone was combined with estrogen (HR = 1.08, P = 0.036). Women aged 60–69 (HR = 0.87, P = 0.002) and >70 (HR = 0.66, P < 0.0001) had lower risk of BC, compared with women aged <60. Women living in the northern part of Taiwan and areas with higher urbanization level had higher risk of BC, compared with their counterparts. CONCLUSIONS: Hormone replacement therapy in postmenopausal women seemed to be associated with an increased risk of BC.

FIRST YEAR MEDICAL CARE COSTS ASSOCIATED WITH HEPATOCELLULAR CARCINOMA IN A MEDICAID POPULATION

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OBJECTIVES: Although hepatocellular carcinoma (HCC) is highly prevalent in East Asia with a growing incidence in the United States, the economic impact of the disease has not been extensively studied. This study compares medical costs of HCC patients in the first year after diagnosis with those of non-cancer controls. METHODS: A Medicaid database (July 1, 2001–June 30, 2007) was used to identify cases with ≥ 1 HCC claim, ≥ 1 HCC post-cancer claim, and no other cancer diagnoses. Controls were matched on age, sex, and race. Costs (2008 USD) for medical care services (inpatient, outpatient, emergency room [ER], long-term care [hospice]) were analyzed as first-year costs and follow-up adjusted costs (per-patient-per-month [PPPM]). All costs were compared using rank sum tests. RESULTS: The study identified 126 HCC cases and 126 controls: mean age 49 years, 51% male, mean follow-up months: 9.2 cases/11.9 controls, and deaths: 29.4% cases/1.6% controls. First-year costs were 1.5 to 8 times higher in cases versus controls (long-term care $3752 vs. $2554, ER $126 vs. $51, outpatient $4143 vs. $1412, inpatient $12,425 vs. $1595, with P < 0.012). PPPM costs were 3 to 27 times higher in cases versus controls (long-term care $626 vs. $233, outpatient $884 vs. $119, ER $34 vs. $4, inpatient $3738 vs. $139, all with P < 0.001). Total costs were two times higher for HCC cases in the first year ($29,795 vs. $13,151, P < 0.001) and six times higher as PPPM ($4,676 vs. $712, P < 0.001). No patients had a sorafenib prescription. CONCLUSIONS: First-year medical care costs were substantially higher for the HCC patients, and even higher when adjusted for follow-up on a PPPM basis. Future therapies that improve survival and disease control may enable payers to reduce monthly costs, and use the savings to treat other patients.

CANCER – Cost Studies

IDENTIFYING KEY PROCEDURES IN HEPATOCELLULAR CARCINOMA PATIENTS WITH HIGHEST PAYER BUDGET IMPACT IN A COMMERCIALLY INSURED POPULATION IN THE UNITED STATES

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OBJECTIVES: Although hepatocellular carcinoma (HCC) is a highly prevalent disease in East Asia with a growing incidence in the US, there is a limited understanding of health-care procedures and their economic impact. This study identifies the procedures with the highest payer budget impact in a commercially insured US population. METHODS: The MEDSTAT insurance claims database (January 1, 2000–December 31, 2008) was used to identify a cohort of patients with ≥ 1 HCC claim (index first claim), age ≥ 18, and no other cancer diagnoses. For each procedure code, all payments (2009 USD) were summed across the cohort and divided by the total patient-months to estimate the per-patient-per-month (PPPM) cost. The PPPM cost was defined to identify procedures with the highest payer budget impact. The proportion of patients utilizing each procedure was calculated to evaluate whether PM costs were driven by a minority of patients. RESULTS: The study sample included 2927 patients: mean age 50.4 years, 57% male, and median 9 months follow-up. The inpatient procedures with the highest budget impact were: liver transplant and/or intestinal transplant ($526/PM, 4.6% of patients), tracheostomy with mechanical ventilation ($204/PM, 0.2%), disorders of liver except malignancy/cirrhosis/ alcoholic hepatitis ($96/PM, 5.1%). For hospital outpatient procedures, they were: magnetic resonance imaging (MRI) of the abdomen ($183/PM, 15%), computed tomography of abdomen ($133/PM, 17%), and ultrasound of abdomen ($183/PM, 4%). CONCLUSIONS: The procedures with the highest budget impact appear to be related to both cancer and liver disease. These costs may be reduced with improved anticancer therapy which provides better cancer control and reduces the exacerbation of liver disease from tumor growth.