THE COST-EFFECTIVENESS ANALYSIS OF SEMI-ANNUAL SCREENING FOR HEPATOCellular CARCINOMA IN PATIENTS WITH CHRONIC HEPATITIS B

Sritab A1, Chaiwegawattana A2, Tunsakul S3, Sukaryothin S4, Apiwanich C1, Sumeththongnya W1, Prasathiplyang K1, Jaisathaporn K1, Karalak A2, Thayakul A2, Kapol N3, Siribudee N2, Chaysakunapruk N4

OBJECTIVES: Hepatocellular carcinoma (HCC) is the fifth cause of death from cancer worldwide. Hepatitis B virus infection is the important risk of HCC. Alpha fetoprotein (AFP) levels in liver ultrasound had been introduced for semi-annual screening test in patients in health with hepatitis B surface antigen positive or patients with chronic hepatitis B. However, the cost-effectiveness of this screening is not well defined. Our objective was to explore the cost-effectiveness of semi-annual HCC screening using AFP and liver ultrasound from societal perspective compared with no screening.

METHODS: With a Markov model, we simulated the four health states of natural history of HCC which were no HCC state, resectable HCC state, unresectable HCC state and death state with 6-month cycle length. The base case decision model was run for male patients with age of 51 that is mean age of screening group. Cost and outcomes were discounted at a 3% annual rate. Probabilistic sensitivity analysis was performed.

RESULTS: For semi-annual HCC screening, the incremental cost effectiveness ratio (ICER) which was compared with no screening was $US1,141 (95% CI $US1,610–$US1,733) per quality adjusted life year (QALY) for male chronic HB patients. Cost effectiveness was greater with liver ultrasound as first cost effective for semi-annual screening HCC in patients with hepatitis B surface antigen positive or patients with chronic hepatitis B, according to the Thai threshold that ICER of cost-effectiven-