

## Abstract

Research Project: Cost utility analysis of pemetrexed with cisplatin for malignance pleural mesothelioma treatment

Malignant Pleural Mesothelioma (MPM) is one of the rare diseases, which has a major cause from asbestos. In Thailand, there were approximately 12 new MPM cases. For unresectable MPM patients, chemotherapy is needed where combination drugs between pemetrexed plus platinum-based have high efficacy. However, pemetrexed is a novel agent which is not yet indicated in National list essential medicine in Thailand. Hence, this study aims to assess the cost-utility of pemetrexed plus platinum-based for malignant pleural mesothelioma. A cost-utility analysis was conducted using a Markov. A societal perspective and life-time horizon were applied. Variables used in the model were derived from primary data collected, consulting MPM specialists, and reviewing both local and international literature. The results show that both pemetrexed plus cisplatin or carboplatin are not cost-effective in Thai context with a cost-effectiveness threshold at 160,000 baht per QALY gained. However, the pemetrexed plus cisplatin would become cost-effective if it is decreased more than 96% of pemetrexed prices in both dosages of 100 and 500 milligrams doses. While the pemetrexed plus carboplatin never has a chance of cost-effectiveness although the price of pemetrexed is reduced due to a high budget of best supportive care. Both chemotherapy regimens will be 5-year budget impacts to government around 32,452,231 and 39,466,259 baht, respectively.

**Keywords:** Cost-Utility Analysis, Markov Model, Malignant Pleural Mesothelioma, MPM, Chemotherapy, Pemetrexed

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