ABSTRACT



Cost-effectiveness analysis of mirogabalin in treatment of diabetic peripheral neuropathic pain and post-herpetic neuralgia in China

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Objective: To evaluate the cost-effectiveness of mirogabalin in treatment of Chinese patients with DPNP or PHN, and to discuss its reasonable pricing strategy.

Methods: A cost-effectiveness analysis was performed by constructing a three-state Markov model (mild, moderate, and severe pain) to compare mirogabalin with placebo and pregabalin for DPNP or PHN patients from Chinese healthcare system perspective. The efficacy parameters were derived from randomized clinical trials (RCTs) comparing mirogabalin with placebo in the treatment of PHN or DPNP, as well as from network meta-analyses comparing mirogabalin/pregabalin with placebo RCTs. The health utility values were obtained from published literatures. Cost parameters contained cost of pregabalin, supportive care, and other medical resource utilization, were sourced from both published literature and public price database. Sensitivity analysis was conducted on key parameters to verify the stability of the results.

Results: With one-year time horizon, for PHN, the incremental quality-adjusted life years (Δ QALYs) of mirogabalin compared with placebo and pregabalin were 0.048 and 0.025 respectively; For DPNP, the Δ QALYs of mirogabalin compared with placebo and pregabalin were 0.021 and 0.017 respectively. Using the national volume-based procurement price of pregabalin as a reference, with 1 and 3 times the per capita GDP in China (¥89,358, 2023) as thresholds, the daily cost of mirogabalin was found to be cost-effectiveness when it was within 1.64 times (DPNP) or 2.07 times (PHN), 2.47 times (DPNP) or 3.46 times (PHN) of the daily cost of pregabalin. One-way sensitivity showed that, utility values of mild and moderate pain, costs of mirogabalin had the biggest influence on incremental cost-effectiveness ratio.

Conclusion: As a novel calcium channel modulator, the cost-effectiveness of mirogabalin is greatly influenced by the reference drug. When pricing in China, it is essential to select appropriate comparator drugs and their prices as references.

Key words: cost-effectiveness, mirogabalin, diabetic peripheral neuropathic pain, postherpetic neuralgia

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