

Cost-Effectiveness of Zoledronic acid versus Alendronic acid in the treatment of osteoporosis in postmenopausal Egyptian patients: decision analysis

Abstract

Objectives

To evaluate from the Ministry of Health perspective, over a five-year period, the cost-effectiveness of using zoledronic acid 5mg compared to that of alendronic acid in the treatment of osteoporosis in postmenopausal Egyptian patients.

Methods

A Markov model with five mutually exclusive health states (Well, hip fracture, spine (vertebral) fracture, wrist (non-vertebral) fracture, and death) was developed. The transition probabilities between the health states were derived from a previously published source. Health state utilities and major adverse events were obtained from published sources. Direct medical costs were obtained from the Ministry of health list. Costs and effects were discounted at 3.5% annually. One way sensitivity analyses were conducted.

Results

Across the overall population, the total QALYs of the Zoledronic acid group were estimated to be 194.4 compared with 194.1 for the Alendronic acid group, which resulted in a difference of 0.33 QALYs. The total costs for the Zoledronic acid group and Alendronic acid group were LE 215,232 and LE 215,087 respectively. These costs yielded an ICER of LE 435 for the Zoledronic acid group. The odds ratio of zoledronic acid on

vertebral & non-vertebral fractures was found to have the greatest impact on the results.

Conclusions

Compared with our willingness-to-pay threshold stated by world health organization for middle and lower income countries, Zoledronic acid is cost-effective; and most likely to result in an ICER lower than the threshold limit. Thus, the new treatment (Zoledronic acid) should be recommended in the Ministry of health list.