INTRODUCTION

Poor compliance and failure to persist with oral bisphosphonates are common, but the clinical and economic consequences have not been well described. This study aims to estimate the clinical and economic burden of nonadherence with oral bisphosphonates in osteoporotic patients and to examine the scope for adherence-enhancing interventions.

METHODS

A validated Markov microsimulation model (1) estimated costs and outcomes (i.e. the number of fractures and the quality-adjusted life-year (QALY)) for three adherence scenarios: no treatment, real-world (RW) adherence and full adherence over 3 years. Simulated patients matched the populations where osteoporosis medications are reimbursed.

The real-world adherence scenario employed compliance and persistence data from a published observational study (2) and adherence was divided into persistence and compliance. Real-world persistence assumed that 42% of patients discontinue therapy within the first six months of therapy and that 18.1% and 13.9% stop therapy after 1 and 2 years respectively. Patients with low compliance (medical possession ratio (MPR) less than 80%) were associated with a 35% increase in hip fracture rate and with a 17% increase in other fracture rates (3).

The incremental cost per QALY gained was estimated and compared across the three adherence scenarios. Additional simulations estimated the potential cost-effectiveness of adherence-enhancing interventions according to their cost (ranging from €0 to €300, per year) and effect on adherence (i.e. improvements of real-world adherence by 10%, 25% or 50%).

RESULTS

The number of fractures prevented and the QALY gain obtained at real-world adherence levels represented only 42.0% and 41.9% of those expected with full adherence, respectively. The cost per QALY gained of real-world adherence compared with no treatment was estimated at €10 279, and full adherence was found to be cost-saving (lower cost and greater effectiveness) compared with real-world adherence.

CONCLUSIONS

¾ More than half of the potential benefits from oral bisphosphonates in patients with osteoporosis are lost due to poor compliance and failure to persist.
¾ Moreover, non-adherence substantially affects the cost-effectiveness of osteoporosis drugs, and should therefore be included in pharmacoeconomic analyses.
¾ Strategies to improve adherence are therefore needed and, depending on their cost, have the potential to be an attractive use of resources.

REFERENCES