**Pregabalin vs gabapentin in the treatment of neuropathic pain in Italy: a cost-effectiveness analysis**

### Background

- Neuropathic pain (NP) is common and difficult to treat, as it responds poorly to classical pain-killing drugs. Pregabalin is a new treatment option for NP, both more effective and more costly than the reference drug, gabapentin, the only agent approved in Italy for NP before pregabalin introduction.

### Objective

- To compare the economic impact of treating neuropathic pain with pregabalin (P) versus gabapentin (G) in Italy.

### Methods

- We present cost-effectiveness and cost-utility analyses of pregabalin versus gabapentin in NP (post-herpetic neuropathy and diabetic neuropathy) treatment.
- A previously reported [1] stochastic model was used to estimate daily pain experience and the impact of pregabalin and gabapentin on it. The dynamic simulation focuses on a hypothetical cohort of 1,000 patients with NP and simulates their daily pain experience over 12 weeks, in order to estimate clinical and economic outcomes for the group as a whole.
- Treatment effect functions are expressed as distributions of percent score reductions on the VAS pain scale. These functions were derived from a RCT vs. placebo for pregabalin [2], and from a time-dependent dose-response model fitted on data from two RCTs for gabapentin [3,4,5].
- Initial distribution of the cohort among health states (pain severity grades) reflects that of patients enrolled in pregabalin RCT.
- Health state-specific utilities (0.67 for mild pain, 0.46 for moderate and 0.16 for severe pain) were obtained from the published data of an international survey on NP conducted in 6 large European nations (France, Germany, Italy, UK, Spain and Netherlands) [6].
- Health state-specific healthcare services consumption was elicited from a Delphi Panel of national clinical experts.
- The perspective of the Italian National Healthcare Service (NHS) was adopted: pharmaceutical costs were quantified according to the Italian market price of the drugs; healthcare procedure and hospitalization costs were quantified on the basis of national tariffs.
- The main scenario comprised pregabalin 375 mg/die vs gabapentin 1,800 mg/die; sensitivity of the results to decreasing gabapentin dose to 1,200 mg/die was analyzed.
- Incremental cost-effectiveness is expressed in terms of the incremental cost per additional day with no or mild pain; incremental cost-utility as incremental cost per QALY gained.

### Results

**Table I. Health care resources, probabilities elicited from the Delphi Panel and unit costs**

**Table II. Estimated mean outcomes and costs in the treatment groups**

**Table III. Main scenario: incremental cost/effectiveness and cost/utility ratios**

**Table IV. Alternative scenario: costs/effectiveness and cost/utility when gabapentin 1,200 mg/die is compared...**

### Conclusions

- Although pregabalin pharmaceutical costs are higher than gabapentin costs, the analyses conducted show that for the Italian NHS its increased effectiveness has a small additional cost per day with no or mild pain. Cost/utility ratios are within benchmark acceptability thresholds in all tested hypotheses.

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### References