

Cost offsets for erenumab responders regarding migraine-related healthcare resource use and productivity loss in Portugal

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Introduction

- Migraine prophylaxis is still an area of large unmet medical needs. Although some patients may benefit from current standard of care, tolerability issues and low adherence and persistence call for alternative therapies with improved long-term tolerability and safety profiles^{1,2}.
- In Portugal, erenumab is reimbursed for migraine prophylaxis in adults with 4 or more monthly migraine days and three or more prophylactic treatments failures (TF3+).
- In the Portuguese clinical practice, at least 75% of the patients treated with erenumab show a response, i.e., reduction of $\geq 50\%$ in MMD at month 3 *versus* baseline^{3,4}.
- **We aimed to assess the cost offsets of erenumab 140 mg in TF3+ responders in comparison with no prophylaxis.**

Methods

- Changes in migraine-related health resource use (HCRU) and productivity loss in responders were estimated using a published responder analysis tool⁵.
- Calculations were performed considering use of erenumab 140 mg and assuming that 70% are chronic patients⁶.
- The societal perspective was taken for the cost analysis considering direct medical costs and indirect costs (absenteeism and presenteeism).
- Unitary costs were extracted from Portuguese official sources^{7,8} and annual costs per patient were expressed in 2020 euro.

Results

- The change of disease burden with erenumab estimated by the responder analysis tool is described in Table 1.
- It is expected a decrease in the need for medical attendance (consultations, emergency, hospitalization) use in responders but a slight increase in nurse visits may be seen.
- Due to the effect of erenumab in reducing MMD, need for rescue medication (for headache or specific for migraine) is estimated to decrease (lower number of days).
- A marked decrease in productivity loss is also estimated.

Table 1 Changes of monthly health resource use and productivity loss in TF3+ erenumab responders

Health resource use and productivity loss/month	No prophylaxis	Responder to erenumab	% change
Neurologist visits	0.058	0.017	-69%
General practitioner visits	0.562	0.380	-33%
Nurse visits	0.115	0.120	12%
Hospitalizations	0.047	0.040	-16%
Emergency room visits	0.108	0.067	-37%
Migraine medication (days)	8.2	2.3	-68%
Headache medication (days)	5.0	2.0	-59%
Absenteeism (hours)	18.1	6.5	-60%
Presenteeism (hours)	41.3	17.0	-55%

Disclosures

All authors are employees at Novartis.

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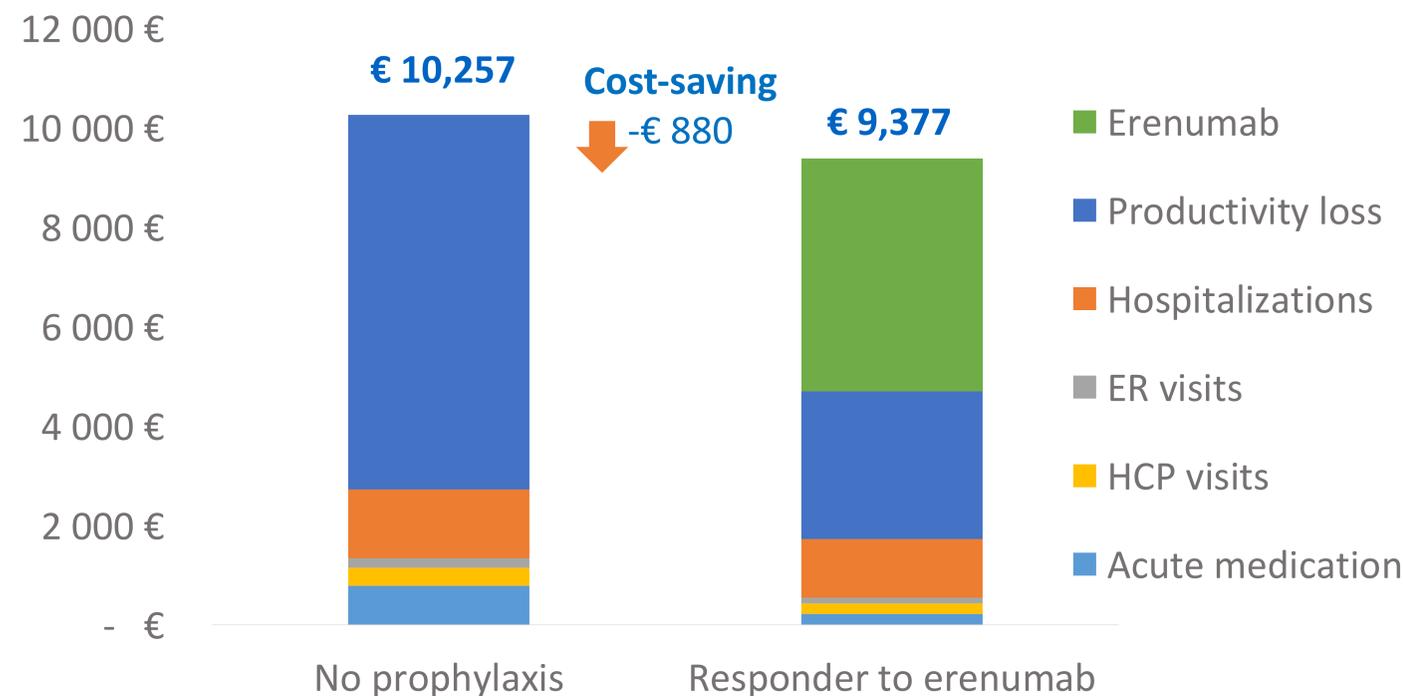
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Results (cont.)

- Applying unitary costs to the healthcare resource use and productivity loss for one year in a patient in best supportive care (without prophylaxis) *versus* responder to erenumab, cost estimates are €10,257 and €9,377, respectively (Figure 1).
- Acquisition cost of erenumab is offset by a reduction in direct medical costs (-37%) and productivity loss (-61%) compared to no prophylaxis.
- Response to erenumab corresponds to a cost-saving of €880/patient/year.

Figure 1 Estimated annual cost per TF3+ patient



Discussion

- Erenumab 140 mg brings cost-savings to society amongst patients who achieve response and therefore who are expected to stay on treatment in the mid- and long-term.
- This analysis shows that erenumab may free up healthcare resources for other use/users becoming an opportunity to optimize hospital efficiency.
- The impact of erenumab in out-of-pocket expenses was not measured but may also be reduced in responders (e.g. less transportation cost, less co-payments in medical assistance).
- The magnitude of cost offsets would become larger if the effect of erenumab in patients' quality of life is accounted for in this monetary analysis.
- Real-world studies analysing the effect of erenumab on HCRU and productivity will be useful to validate these results.

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