A Multi-Stakeholder Multicriteria Decision Analysis in Rare Diseases: Reimbursement Criteria for Orphan Drugs in Spain (FinMHU-MCDA study)

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Introduction / Objective

Introduction

- Patient access to orphan medicinal products (OMPs) is limited and varies between countries.
- Reimbursement decisions on OMPs are complex and there is a need for more transparent processes to know which criteria are considered to inform these decisions.
- Multicriteria Decision Analyses (MCDA) are a set of techniques that provides a rigorous approach for decision making and helps increase the consistency and transparency of these decisions[1,2].

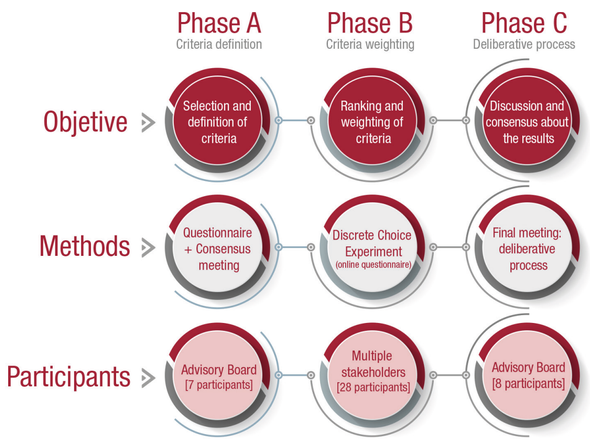
Objective

To determine the most relevant criteria for the reimbursement of OMPs in Spain, from a multi-stakeholder perspective.

Methods

- A MCDA was carried out following the International recommendations (ISPOR Emerging Good Practice Task Force).
- The study was developed in three phases (figure 1):

Figure 1. Phases of the FinMHU-MCDA study



Methods

- A total of 28 different stakeholders (out of 89 contacted) with experience in the field of OMPs participated in this study. They were classified in five groups:
  - 6 physicians
  - 5 hospital pharmacists
  - 7 health economists
  - 4 patients' representatives
  - 6 members from national and regional health authorities

PHASE A

- A bibliographic review was conducted to identify the potential reimbursement criteria from published MCDA-based studies regarding decision making and financing of orphan drugs.
- Then, a reduced advisory board (8 members) proposed, selected, and defined the final list of criteria that could be relevant for reimbursement.

PHASE B

- A discrete choice experiment (DCE) was developed to determine the relevance and relative importance of such criteria according to the stakeholders' preferences by choosing between pairs of hypothetical financing scenarios through an online questionnaire.
- A multinomial logit model was fitted to analyze the DCE questionnaire responses. All statistical analyses were performed using R software (v. 3.2.3).
- Considering n criteria evaluated, relative importance (WD) was estimated through the following formula:

$$V_D = |Coef_D|/SE_D \quad \text{and} \quad W_D = \frac{V_D}{\sum_{i=1}^{n} V_{Di}} \cdot 100$$

Coef: coefficient; SE: standard error

PHASE C

- The advisory board review the DCE results and conclusions were drawn through a deliberative process.

Results

- A total of 13 criteria were defined, related to 4 dimensions: patient population, disease, treatment, and economic evaluation (table 1).
- From the combination of the criteria levels, a set of 36 pairs of hypothetical financing scenarios was obtained for the DCE questionnaire.
- Nine criteria were deemed relevant for decision-making and associated with a higher relative importance (table 2).
- Considering all the stakeholders (n=28), the impact of treatment on health-related quality of life (HRQL) was the criterion with the greatest importance in decision-making (23.53%), followed by efficacy (14.64%), availability of treatment alternatives (13.51%), disease severity (12.62%), and avoided costs (11.21%).
- HRQL, efficacy, availability of treatment alternatives and avoided costs were relevant in every stakeholder group.
- In the Health Authorities and Health Economics stakeholder groups, the 3 economic evaluation criteria were considered relevant to decision-making (cost of treatment, avoided costs and cost-effectiveness).

Table 1. Selected criteria and levels for orphan drug reimbursement

CRITERION	LEVEL 1	LEVEL 2	LEVEL 3
POPULATION			
1. Target population	Prevalence <0.2 per 10,000 inhabitants	Prevalence between 0.2 and 1 per 10,000 inhabitants	Prevalence >1 but <5 per 10,000 inhabitants
2. Age of target population	Nonpediatric	Pediatric	
DISEASE			
3. Disease severity	Mild	Moderate	Severe
4. Economic burden of the disease	Low economic impact	Moderate economic impact	High economic impact
TREATMENT			
5. Safety (seriousness of adverse events)	Serious adverse events	Nonserious adverse events	
6. Safety (adverse events frequency)	Frequent adverse events	Infrequent adverse events	
7. Availability of treatment alternatives	No other therapeutic options	There are other options, but the current treatment improves health more than the alternatives.	There are therapeutic options with similar characteristics.
8. Efficacy	High benefit: curative or significant increase in survival	Moderate benefit: stabilization of the disease or improvement in quality of life	Low benefit: palliative or symptomatic
9. Quality of evidence	Randomized controlled trial with comparator	Other types of clinical trials or with inappropriate comparator	Nonrandomized study
10. Health-related quality of life	Treatment improves health-related quality of life	Treatment does not modify health-related quality of life	Treatment decreases health-related quality of life
ECONOMIC EVALUATION			
11. Cost of treatment	< €100,000 per year	€100,000 to €300,000 per year	> €300.000 per year
12. Costs avoided by treatment	Avoids direct medical and nonmedical costs derived from the disease and indirect costs due to loss of productivity.	Avoids direct medical costs derived from the disease	Does not avoid direct/indirect costs of the disease, or there is not enough information on avoided costs.
13. Cost-effectiveness	Cost-effective	Not cost-effective	

Results

Table 2. Results of FinMHU-MCDA study

		N=28	Patient Associations (n=4)	Physicians (n=6)	Health economics (n=7)	Hospital Pharmacy (n=5)	Health Authorities (n=6)
1	Health-related quality of life	23.53%	14.27%	20.55%	25.11%	22.35%	21.83%
2	Efficacy	14.64%	13.23%	15.05%	8.86%	17.10%	10.73%
3	Availability of treatment alternatives	13.51%	11.00%	9.92%	6.00%	16.43%	19.39%
4	Disease severity	12.62%	13.93%	11.62%	14.82%	8.89%	5.27%
5	Avoided costs	11.21%	11.55%	10.45%	13.06%	9.27%	6.90%
6	Age of target population	7.75%	6.55%	8.20%	2.15%	8.22%	10.16%
7	Safety (seriousness of adverse events)	4.72%	8.70%	5.49%	4.15%	1.50%	1.10%
8	Quality of evidence	3.82%	3.91%	7.21%	2.44%	4.50%	1.05%
9	Target population	3.12%	2.62%	0.38%	2.13%	3.61%	7.26%
10	Economic burden of the disease	2.50%	3.15%	3.78%	2.97%	2.43%	2.78%
11	Cost of treatment	1.73%	2.34%	2.57%	4.72%	0.79%	4.88%
12	Cost-effectiveness	0.83%	7.57%	2.83%	9.46%	2.04%	6.15%
13	Safety (frequency of adverse events)	0.03%	1.19%	1.73%	4.12%	2.25%	2.52%

Highlighted cells: criteria relevant for decision-making

Conclusions

From a multi-stakeholder perspective, the reimbursement of an orphan drug will be conditioned by its effect on the health-related quality of life, the degree of its therapeutic benefit, and the availability of other treatment options. The severity of the rare disease for which the OMP is indicated is also relevant, as is the extent to which the treatment can avoid the costs associated with this pathology.

References

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