

Patients' Preferences For Psoriasis Treatment Based on a Discrete Choice Experiment. COEPSO Study

Llamas-Velasco M¹, Sánchez-Pérez J¹, Pardo J², Cabeza-Martínez R³, Miranda Fontes M⁴, Márquez J⁵, Armesto S⁶, Belinchón I⁷, Castañeda S¹, Casado A⁸, Amaro A⁸, Yébenes M⁸, Sabater E⁸, COEPSO Study Group*

¹ Hospital Universitario de La Princesa, Madrid, Spain; ² Hospital General Universitario Santa Lucía, Cartagena, Spain; ³ Hospital Universitario Puerta de Hierro de Majadahonda, Madrid, Spain; ⁴ Hospital Universitario Río Hortega, Valladolid, Spain; ⁵ Hospital General de Jerez de la Frontera, Cádiz, Spain; ⁶ Hospital Universitario Marqués de Valdecilla, Santander, Spain; ⁷ Hospital General Universitario de Alicante, Spain; ⁸ Pharmacoeconomics & Outcomes Research Iberia (PORIB), Madrid, Spain

INTRODUCTION

- Psoriasis affects physical health and have a strong psychological and social impact on quality of life. Besides, disability and productivity loss mean a significant economic impact for health systems and patients (Mustonen 2014).
- The involvement of patients in therapeutic decisions is related to greater adherence and response to treatment, which implies greater patient satisfaction (Weldring 2013, Deshpande 2011).
- The Discrete Choice Experiment (DCE) is a methodology that assess how treatment characteristics affect patients' preferences for treatment. The aim of DCE models is that the choice made by each individual can be derived under the assumption of utility-maximization behavior (Train 2009). In DCE, patients must choose for each hypothetical treatment performed according to their preferences (de Bekker-Grob 2015).

OBJECTIVES

- To assess treatment preferences from the perspective of psoriatic patients treated with oral therapies and phototherapy in Spain.
- An additional analysis based on psoriasis severity using Psoriasis Area Severity Index (PASI), considering PASI<10 and PASI≥10, was performed.

METHODS

- The COEPSO Study was an observational, cross-sectional and retrospective study including psoriatic patients naïve to biological therapies. It was initiated in February 2017 and finished in February 2018. Seventeen Dermatology Services of Spanish hospitals participated in the study.
- A DCE questionnaire was designed to assess the patients' preferences for treatment. The factors considered for the DCE were: affected skin surface, itching intensity, gastrointestinal symptoms, tumour appearance, serious infection risk and administration route (Table 1).
- A multinomial logit model maximizing the exact conditional likelihood was fitted to analyse the DCE responses considering as relevant the criteria with p-values<0.05. To assess the impact of each factor in patients' preference, the relative weight index was estimated.

Table 1. Attributes and levels used on the Discrete Choice Experiment

Attributes aggregation	Treatment Attribute	Levels
Efficacy	Reduction of affected skin surface	<ul style="list-style-type: none"> No changes in the affected area Partial reduction in the affected area Total / almost total reduction of the affected area
	Itching reduction	<ul style="list-style-type: none"> No reduction of itching Partial reduction of itching Total / almost total reduction of the itch
Safety	Appearance of gastrointestinal symptoms in the first weeks of treatment (nausea, diarrhoea, etc.)	<ul style="list-style-type: none"> Does not increase of gastrointestinal disease risk (nausea, diarrhoea, etc.) Low frequency (1:1000-1:100) of gastrointestinal disease (nausea, diarrhoea, etc.) Common (1:100-1:10) gastrointestinal disease (nausea, diarrhoea, etc.)
	Development tumour risk (e.g melanoma)	<ul style="list-style-type: none"> Does not increase of appearance risk of tumours With little risk of tumour development (less than 1% or 1 out of 100) With possible risk of tumours (3% or 3 out of 100)
	Increased risk percentage of serious infection (e.g pneumonia)	<ul style="list-style-type: none"> Does not increase the risk of serious infection Moderate risk of serious infection (around 20% or 2 out of 10) High risk of serious infection (around 40% or 4 out of 10)
Administration	Administration route	<ul style="list-style-type: none"> Oral Self-administered injectable Intravenous

RESULTS

- A sample of 119 psoriatic patients fulfilled the DCE (plaque psoriasis is presented in 84.03% of patients) and 112 reported PASI at the study start (69 and 43 in PASI<10 and PASI≥10 group, respectively).
- Baseline characteristics are shown in Table 2:
 - Mean age of all patients involved in the study was 44.48 years.
 - Similar diagnosis ages between both groups were reported.

Table 2. Baseline characteristics of the patients included in the COEPSO Study

Patient Group (n)	All Patients (119)	Patients PASI<10 (69)	Patients PASI≥10 (43)
Mean age (SD)	44.48 (11.19)	46.14 (10.57)	41.00 (11.73)
Mean age at diagnosis (SD)	28.05 (14.19)	28.05 (14.52)	28.04 (13.68)
Gender count (%)			
Male	59 (49.58)	37 (53.62)	18 (41.86)
Female	60 (50.42)	32 (46.38)	25 (58.14)
Annual number of psoriatic outbreaks, mean (SD)	2.81 (3.45)	2.24 (2.81)	3.86 (4.27)
PASI, mean (SD)	7.99 (7.34) *	3.34 (2.54)	15.45 (6.27)

PASI: Psoriasis Area Severity Index; SD: Standard Deviation
* There are 7 patients without PASI level.

- The DCE results are shown in Table 3:
 - All three groups present similar preferences in measured attributes.
 - In "All Patients" group, the most important attributes reported are those related to safety (weight, 63.48%), followed by efficacy and administration route with weights of 23.13% and 13.38%, respectively.

Table 3. Discrete Choice Experiment results

Patient Group (n)	Attribute	Levels	All patients (119)			Patients PASI<10 (69)			Patients PASI≥10 (43)		
			Coef	p-value	Weight %	Coef	p-value	Weight %	Coef	p-value	Weight %
Reduction of the affected skin surface	Reduction of the affected skin surface	No changes in the affected area	0	-	17.97	0	-	26.76	0	-	17.59
		Partial reduction in the affected area	0.81	<0.001		0.80	<0.001		0.87	<0.001	
		Total / almost total reduction of the affected area	0.94	<0.001		1.10	<0.001		0.74	<0.001	
Itching reduction	Itching reduction	No reduction of itching	0	-	5.16	0	-	8.35	0	-	7.55
		Partial reduction of itching	0.27	0.001		0.25	0.009		0.33	0.027	
		Total / almost total itching reduction	0.27	<0.001		0.29	0.002		0.30	0.030	
Appearance of gastrointestinal symptoms in the first weeks of treatment	Appearance of gastrointestinal symptoms in the first weeks of treatment	Does not increase of gastrointestinal disease risk	0	-	11.85	0	-	10.08	0	-	14.25
		Low frequency of gastrointestinal disease	-0.22	0.002		-0.11	0.185		-0.41	0.003	
		Common gastrointestinal diseases	-0.62	<0.001		-0.56	<0.001		-0.79	<0.001	
Tumour development risk	Tumour development risk	Does not increase of tumour risk appearance	0	-	23.33	0	-	14.56	0	-	23.04
		Low risk of tumour development	-0.23	0.002		-0.09	0.293		-0.49	<0.001	
		Possible risk of tumours	-1.22	<0.001		-0.99	<0.001		-1.76	<0.001	
Serious infection risk	Serious infection risk	Does not increase the serious infection risk	0	-	28.30	0	-	27.19	0	-	23.25
		Moderate risk	-0.55	<0.001		-0.57	<0.001		-0.49	<0.001	
		High risk	-1.48	<0.001		-1.37	<0.001		-1.80	<0.001	
Administration route	Administration route	Oral	0	-	13.39	0	-	13.06	0	-	14.32
		Self-administered injectable	-0.35	<0.001		-0.26	0.003		-0.40	0.003	
		Intravenous	-0.70	<0.001		-0.59	<0.001		-0.81	<0.001	

Coef: Coefficient; PASI: Psoriasis Area Severity Index; Attribute levels coefficients are compared with the first level within each attribute (Coef 0); Coefficients are directly related to patient treatment preferences, negative values indicate attributes that patients prefer to avoid, positive values indicate attributes preferred by patients.

CONCLUSIONS

- The assessment of patients' preferences for treatment allows to include patients perspective into decision-making for their treatments options. Based on the Discrete Choice Experiment, by relevance, patients prefer those treatments that:
 - Do not increase risk of infection.
 - Do not increase risk of tumour appearance.
 - Reduce the affected area as much as possible.
 - Are oral administrated.
 - Do not increase appearance of gastrointestinal symptoms.
 - Reduce itching as much as possible.
- Severity of disease could be a key factor in patients' preferences. The subgroup analysis shows that the most important attribute is related to the absence of long-term treatment safety.
- It is important to ensure that patients make decisions that are consistent with their needs, preferences, and values. Clinicians have an important role in improving patient-centered communication and shared decision making by assessing a patient's understanding of treatment options and validating patient's participation in the decision-making process.

*COEPSO Study Group

- Ara, Mariano / Rivera, Álvaro (Hospital Clínico Universitario Lozano Blesa, Spain).
- Armesto, Susana / Marcellán, María (Hospital Universitario Marqués de Valdecilla, Spain).
- Belinchón, Isabel / Betloch, Isabel / Riquelme, Jorge (Hospital General Universitario de Alicante, Spain).
- Castañeda, Santos / Vicente, Esther Francisca (Hospital Universitario de La Princesa, Spain).
- García, Mercedes / Curcó, Neus (Hospital Universitari Mútua de Terrassa, Spain).
- Roustan, Luis Gastón / Cabeza-Martínez, Rita (Hospital Universitario Puerta de Hierro Majadahonda, Spain).
- Herrera, Enrique / Sánchez, Cristina (Hospital Universitario Virgen de la Victoria, Spain).
- Llamas-Velasco, María del Mar / Sánchez-Pérez, Javier (Hospital Universitario de La Princesa, Spain).
- López, Eduardo / Guhl, Guillermo (Hospital Clínico San Carlos Madrid, Spain).
- López, José Luis / Sanz, Azucena (Hospital Universitario Fundación Alcorcón, Spain).
- Márquez, Juan (Hospital de Especialidades de Jerez de la Frontera, Spain).
- Martín, Isabel (Hospital Universitario de Getafe, Spain).
- Ocaña, María José (Hospital Comarcal San Agustín de Linares, Spain).
- Pardo, José (Hospital General Universitario Santa Lucía, Spain).
- Pitarch, Ana / Armengot, Miquel (Hospital General Universitario de Castellón, Spain).
- Pozo, Tomás / Miranda-Fontes, Mercedes (Hospital Universitario Río Hortega, Spain).
- Ruiz, José Carlos (Complejo Hospitalario Universitario de Granada, Spain).
- Silvente, Catiana (Hospital Universitario Infanta Leonor, Spain).

*COEPSO Study Group Coordinators.

REFERENCES

- Mustonen A et al. Dermatol Ther (Heidelb). 2014;4:115-24.
- Weldring T et al. Health Serv Insights. 2013;6:61-8.
- Deshpande PR et al. Perspect Clin Res. 2011;2:137-44
- Train K. Cambridge University Press. 2nd Ed. 2009.
- de Bekker-Grob EW et al. Patient. 2015;8:373-84.