

Patients' Preferences for Treatment of Psoriatic Arthritis based on a Discrete Choice Experiment. Results of the COEPSO Study

Castañeda S¹, Vicente-Rabaneda EF¹, Calvo-Alén J², Gómez A³, Miranda MD⁴, Martínez Pardo S⁵, Merino L⁶, Llamas-Velasco M¹, Casado A⁷, Amaro A⁷, Sabater E⁷, Yébenes M⁷, COEPSO Study Group*

¹ Hospital Universitario de La Princesa, Madrid, Spain; ² Hospital Universitario Araba, Vitoria-Gasteiz, Spain; ³ Hospital Universitario Infanta Sofía, Madrid, Spain; ⁴ Hospital General San Agustín de Linares, Jaen, Spain; ⁵ Hospital Universitari Mútua Terrassa, Barcelona, Spain; ⁶ Hospital San Pedro, Logroño, Spain; ⁷ Pharmacoeconomics & Outcomes Research Iberia (PORIB), Madrid, Spain

INTRODUCTION

- Psoriatic arthritis (PsA) and psoriasis (Ps) affect physical health and have a high psychological and social impact on health-related quality of life. The disability and productivity loss mean a relevant economic impact for healthcare systems and patients (Mustonen 2014).
- Patients participation in therapeutic decisions directly affects in increasing adherence, persistence and treatment response, which entails 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 treatments performed according to their preferences (de Bekker-Grob 2015).

OBJECTIVE

- To evaluate the treatment preferences from the perspective of psoriatic arthritic patients with or without psoriasis, with oral systemic therapy in Spain.

METHODS

- The COEPSO Study was designed as an observational, cross-sectional and retrospective study including psoriatic arthritic patients with or without psoriasis with no biological therapies. It was initiated in February 2017 and finished in February 2018. Thirteen hospitals from all over Spain participated.
- A DCE questionnaire was designed to evaluate the patients' preferences for treatment. The factors considered for the DCE used in the study were (Table 1): affected skin surface, itching intensity, pain, gastrointestinal symptoms, tumour appearance, serious infection risk and treatment administration route.
- 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
	Pain reduction	<ul style="list-style-type: none"> No pain reduction Partial pain reduction Total pain reduction
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 72 psoriatic arthritic patients fulfilled the DCE, 47 of them with psoriatic arthritis and psoriasis.
- Baseline characteristics are shown in Table 2:
 - Mean age of all patients involved in the study was 49.78 years.
 - Similar diagnosis ages between both groups were reported.
 - Approximately 80% of the patients involved in the study presented peripheral psoriatic arthritis type.

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

Patient Group (n)	PsA (25)	PsA +Ps (47)	Total patients (72)
Mean age (SD)	49.40 (11.19)	49.96 (9.45)	49.78 (10.0)
Mean age at diagnosis (SD)	45.19 (12.69)	47.35 (9.35)	46.46 (10.74)
Gender, count (%)			
Male	14 (56.0)	27 (57.45)	41 (56.94)
Female	11 (44.0)	20 (42.55)	31 (43.06)
DAPSA, average (SD)	11.97 (11.57)	6.17 (5.69)	9.58 (9.71)
PsA presentation, count (%)			
Peripheral	21 (84.0)	37 (78.72)	58 (80.56)
Mixed	3 (12.0)	6 (12.77)	9 (12.5)
Axial	1 (4.0)	2 (4.26)	3 (4.17)
Non specified	0 (0)	2 (4.26)	2 (2.78)
Number of arthritic psoriatic outbreaks, annual average (SD)	1.64 (1.8)	2.83 (3.39)	2.37 (2.97)
Ps presentation*			
Plaques	—	28 (53.85)	28 (38.89)
Other	—	13 (25.00)	13 (18.05)
Non specified	—	11 (21.15)	11 (15.28)
Number of psoriatic outbreaks, annual average (SD)	—	2.78 (3.03)	2.77 (3.07)

DAPSA: Disease Activity index for Psoriatic Arthritis; PsA: Psoriatic Arthritis; Ps: Psoriasis; SD: Standard Deviation
*There are patients with 2 types of pathology

- As shown in Table 3:
 - All three groups presented similar preferences in measured attributes.
 - Comparing PsA and PsA+Ps groups, it is observed that the reduction of the affected area and itching attributes are only relevant for PsA+Ps group.
 - For PsA patients, the most relevant attributes reported are: serious infection risk (weight, 35.56%), tumour development risk (weight, 19.77%) and pain reduction (weight, 18.07%).
 - For PsA+Ps patients, the most relevant attributes reported are: serious infection risk (weight, 31.21%), pain reduction (weight, 21.08%) and tumour development risk (weight, 16.34%).
 - In "Total patients" group, the most relevant attributes reported are: serious infection risk, pain reduction and tumour development risk with 29.42%, 20.10% and 18.01% weights, respectively.

Table 3. Discrete Choice Experiment results

Patient Group (n)	Attribute	Levels	PsA (25)			PsA +Ps (47)			Total patients (72)		
			Coef	p-value	Weight %	Coef	p-value	Weight %	Coef	p-value	Weight %
	Reduction of the affected skin surface	No changes in the affected area	0	-		0	-		0	-	
		Partial reduction in the affected area	0.07	0.72	1.00	0.43	<0.001	7.03	0.31	<0.05	5.11
		Total / almost total reduction of the affected area	0.00	0.98		0.25	0.06		0.16	0.16	
	Itching reduction	No reduction of itching	0	-		0	-		0	-	
		Partial reduction of itching	-0.06	0.80	2.28	0.11	0.38	7.84	0.03	0.77	4.18
		Total / almost total itching reduction	0.16	0.47		0.48	<0.001		0.36	<0.001	
	Pain reduction	No pain reduction	0	-		0	-		0	-	
		Partial pain reduction	1.05	<0.001	18.07	0.76	<0.001	21.08	0.79	<0.001	20.10
		Total pain reduction	1.27	<0.001		1.29	<0.001		1.22	<0.001	
	Appearance of gastrointestinal symptoms in the first weeks of treatment	Does not increase of gastrointestinal disease risk	0	-		0	-		0	-	
		Low frequency of gastrointestinal disease	-0.69	<0.05	13.09	-0.50	<0.001	8.17	-0.56	<0.001	12.64
		Common gastrointestinal diseases	-0.92	<0.001		-0.46	<0.001		-0.58	<0.001	
	Tumour development risk	Does not increase of tumour risk appearance	0	-		0	-		0	-	
		Low risk of tumour development	-0.61	<0.001	19.77	-0.60	<0.001	16.34	-0.60	<0.001	18.01
		Possible risk of tumours	-1.39	<0.001		-1.00	<0.001		-1.09	<0.001	
	Serious infection risk	Does not increase the serious infection risk	0	-		0	-		0	-	
		Moderate risk	-1.14	<0.001	35.56	-0.78	<0.001	31.21	-0.89	<0.001	29.42
		High risk	-2.50	<0.001		-1.91	<0.001		-2.02	<0.001	
	Administration route	Oral	0	-		0	-		0	-	
		Self-administered injectable	-0.34	0.16	10.23	-0.48	<0.001	8.33	-0.44	<0.001	10.54
		Intravenous	-0.72	<0.001		-0.51	<0.001		-0.56	<0.001	

Coef: Coefficient; PsA: Psoriatic Arthritis; Ps: Psoriasis; 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 evaluation of patients' treatment preferences allows to include patients perspective into decision-making for their treatments options. Based on the Discrete Choice Experiment, by importance, patients prefer those treatments that:
 - Do not increase risk of infection.
 - Reduce pain.
 - Do not increase risk of tumour appearance.
 - Do not increase appearance of gastrointestinal symptoms.
 - Are oral administrated.
 - Reduce affected skin surface (for PsA+Ps patients).
 - Reduce itching (for PsA+Ps patients).
- Assessing patient's preferences about their treatments is important to develop measures adapted to patient needs and to improve healthcare quality. Therefore, patients should actively participate in their own care.

*COEPSO Study Group

- Aragón, Ángel (Hospital Universitario de Getafe, Spain).
- Belmonte, Miguel Ángel / Conesa, Arantxa (Hospital General Universitario de Castellón, Spain).
- Calvo-Alén, Jaime / Jiménez de Aberasturi, Juan Ramón de Dios (Hospital Universitario de Araba, Spain).
- Castañeda, Santos / Vicente-Rabaneda, Esther Francisca (Hospital Universitario de La Princesa, Spain).
- Cebrián, Laura (Hospital Universitario Infanta Leonor, Spain).
- Chamizo, Eugenio / Pardo, Ana María (Complejo Hospitalario del Área de Salud de Mérida, Spain).
- Delgado, Concepción / Del Rio, María Pilar (Hospital Clínico Universitario Lozano Blesa, Spain).
- García, Rosa (Hospital Universitario Virgen de la Victoria, Spain).
- Juan, Antoni / Melià, Catalina (Hospital de Son Llàtzer, Spain).
- Llamas-Velasco, María del Mar / Sánchez, Javier (Hospital Universitario de La Princesa, Spain).
- López, Juan Antonio / Merino, Leticia (Complejo Hospitalario San Pedro, Spain).
- Martínez-Pardo, Silvia / Rusiñol, María (Hospital Universitari Mútua Terrassa, Spain).
- Miranda, María Dolores (Hospital Comarcal San Agustín de Linares, Spain).
- Muñoz, Santiago / Gómez, Alejandro (Hospital Universitario Infanta Sofía, Spain).
- Raya, Enrique / Notario, Irene Beatriz (Complejo Hospitalario Universitario de Granada, Spain).

*COEPSO Study Group Coordinators.

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