

# MULTI-COUNTRY, CROSS-SECTIONAL STUDY TO DETERMINE PATIENT-SPECIFIC AND GENERAL BELIEFS TOWARD MEDICATION AND THEIR TREATMENT ADHERENCE TO SELECTED SYSTEMIC THERAPIES IN 6 CHRONIC IMMUNE-MEDIATED INFLAMMATORY DISEASES (ALIGN): OVERALL RESULTS, AND PRELIMINARY RESULTS FOR THE PORTUGUESE SUBPOPULATION

P. Ferreira<sup>1</sup>, P. Lago<sup>2</sup>, A. Barcelos<sup>3</sup>, T. Torres<sup>2</sup>, P. Moura Santos<sup>4</sup>, J. Canas da Silva<sup>5</sup>, L. Leite<sup>6</sup>, A. Vilar<sup>7</sup>, A. R. Cravo<sup>8</sup>, D. Bento<sup>8</sup>, C. Vaz<sup>8</sup>, F. Portela<sup>9</sup>.

<sup>1</sup> Hospital CUF Descoberta (Lisboa); <sup>2</sup> Centro Hospital do Porto, E.P.E. (Porto); <sup>3</sup> Centro Hospitalar Baixo Vouga, E.P.E. (Aveiro); <sup>4</sup> Centro Hospitalar Lisboa Norte (Lisboa); <sup>5</sup> Consilium, Consultores em Reumatologia e Osteoporose (Lisboa); <sup>6</sup> Clínica Laser de Belém (Lisboa); <sup>7</sup> Hospital dos Lusíadas (Lisboa); <sup>8</sup> AbbVie, Lda. Amadora (Portugal); <sup>9</sup> Centro Hospitalar de Coimbra (Coimbra).

Presented at Semana Digestiva 2018, 20-23 June 2018, Alfândega do Porto, Portugal

## INTRODUCTION

- Adherence to medication is essential to achieve and sustain management targets and optimal outcomes in the treatment of patients with immune-mediated inflammatory disease (IMiD);
- Personal motivation to start and continue medication is a key factor in adherence to medication, and is shown to be strongly influenced by patients' beliefs about the necessity for treatment and concerns about potential side effects;<sup>1</sup>
- Knowledge about such beliefs and concerns in patients with IMiDs is limited thus far;
- To our knowledge, ALIGN is the first multi-country cross-sectional study, to determine patients' specific and general beliefs towards medication and their treatment adherence to selected systemic therapies (either alone or in combination) in the treatment of 6 chronic IMiDs.

## OBJECTIVES

### PRIMARY OBJECTIVE

To describe patient's beliefs and risk concerns in patients with chronic IMiD towards their systemic medication, i.e.:

- Tumor necrosis factor inhibitors (TNFi); or
- Conventional systemic medication such as:
  - Disease modifying anti-rheumatic drugs (DMARDs);
  - Nonsteroidal anti-inflammatory drugs (NSAIDs), and
  - Immunomodulators (IMMs); or
- Combination of both.

### SECONDARY OBJECTIVES

- To correlate patients' beliefs and risk concerns with disease characteristics (duration, severity, treatment history);
- To assess and describe beliefs about TNFi treatments as well as systemic treatments other than biologics (e.g. DMARDs, NSAIDs and IMMs);
- To describe self-reported adherence levels with TNFis and conventional systemic medication;
- To assess the correlation of patients' beliefs about treatments with the respective treatment compliance levels and patient perception parameters like illness beliefs.

## METHODS

### STUDY DESIGN

- Multi-country, observational, cross-sectional study;
- Study conducted between June 2012 and October 2013;
- Data were collected by physicians during a single outpatient visit scheduled for routine follow-up of the IMiD (without randomization).

### DATA COLLECTION

- From patients' records: demographics, social and educational background, disease related data (IMiD diagnosis and disease severity, current comorbidities, prior surgery for Crohn's disease and ulcerative colitis), and medication related data (current IMiD treatment and response, previous IMiD treatment, concomitant medication other than IMiD treatment);

From patient questionnaires, for assessing patient-reported outcomes: BMQ and MMAS-4 (responses to questionnaires were sealed by the patient in an envelope to ensure privacy).

### INCLUSION CRITERIA

- ≥ 18 years old;
- Patients with an IMiD (active rheumatoid arthritis [RA], ankylosing spondylitis [AS], psoriatic arthritis [PsA] Crohn's disease [CD], ulcerative colitis [UC], psoriasis [PS] diagnosed by a rheumatologist, gastroenterologist and dermatologist, respectively);
- On current treatment with a systemic either conventional and/or biologic (TNFi) immunomodulating and/or disease-modifying drugs according to the national label: TNFi monotherapy; TNFi combined with conventional systemic therapies: DMARDs, IMM, steroids, NSAIDs (for AS patients only); systemic therapies: DMARDs, IMM, steroids, NSAIDs (for AS patients only).

### DATA ANALYSIS

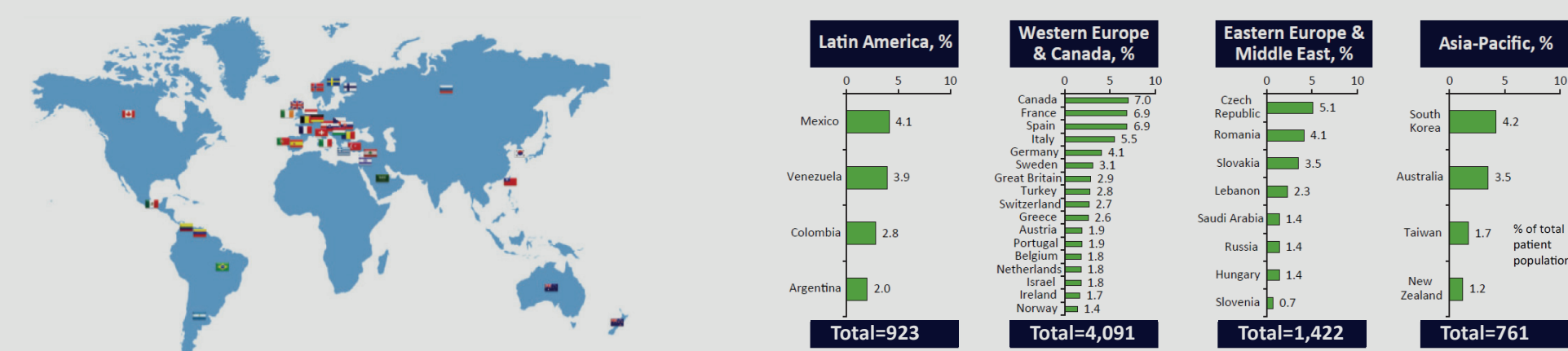
- Mean scores for the BMQ-Specific Necessity and Concerns Subscales for highly adherent patients (defined as MMAS-4 score = 4) were determined for each individual treatment (TNFi only, conventional treatment only, and combination treatment).
- Patients were classified according to BMQ-Specific Necessity and Concerns scores:
  - Indifferent** (if BMQ-Specific Necessity score < 3 and BMQ-Specific Concern score < 3);
  - Skeptical** (if BMQ-Specific Necessity score < 3 and if BMQ-Specific Concern score ≥ 3);
  - Accepting** (if BMQ-Specific Necessity score ≥ 3 and BMQ-Specific Concern score < 3);
  - Ambivalent** (if BMQ-Specific Necessity score ≥ 3 and BMQ-Specific Concern score ≥ 3).
- Fisher's exact test was used to compare the percentages of patients who were accepting towards their medication (TNFi only, conventional treatment only, or combination treatment) with those of patients who were ambivalent towards their medication.

## RESULTS

### BASELINE DEMOGRAPHICS

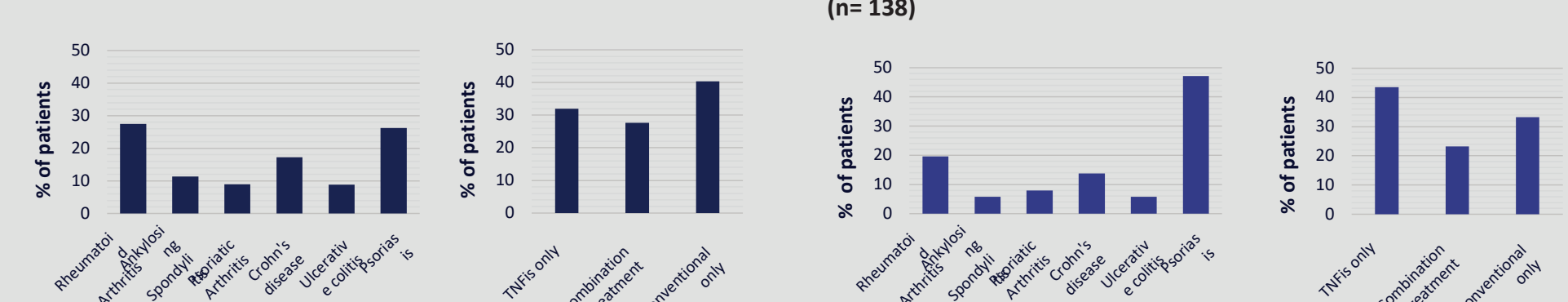
- A total of 7,328 patients from 34 countries were enrolled in the study. Data from 7,197 patients from 33 countries (at around 500 sites in 4 geographical areas) with available documentation for ≥1 questionnaire were included in the final analysis (see Figure 4 Overall Population);
- A total of 138 patients were recruited from Portugal.

Figure 1. Participation in ALIGN study by geographical location\*



- Both in the overall population and in the Portuguese subpopulation, the most prevalent IMiDs were rheumatoid arthritis (overall population: 27.5%; Portuguese subpopulation: 19.6%) and psoriasis (overall population: 26.2%; Portuguese subpopulation: 47.1%) – see Figures 2 and 3;

Figure 2. Overall population: IMiDs and treatment type (n= 7,197)\*



- The mean age was 47.5 (SD ±14.8) years in the overall population<sup>4</sup> and 50.0 (SD ±14.1) in the Portuguese subpopulation, and the mean IMiD duration was 11.7 (SD ±10.9) years in the overall population<sup>4</sup> and 15.3 (SD ±11.8) years for the Portuguese subpopulation (see Table 1).

Table 1. Overall Population: IMiDs and treatment type

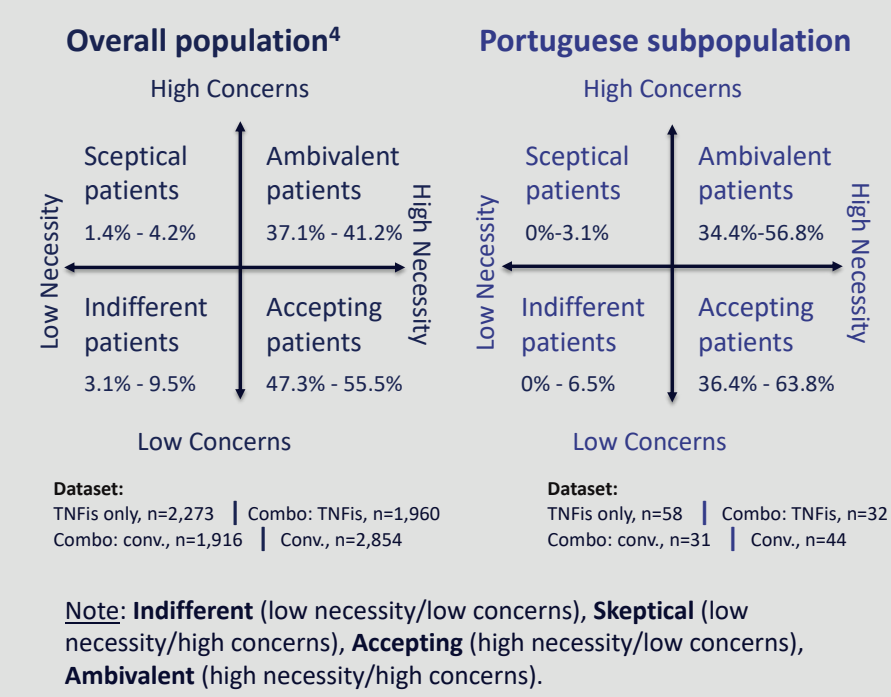
Variable	Overall Population (n=7,197)	Portuguese subpopulation (n=138)					
		RA (n=27)	AS (n=8)	PsA (n=11)	CD (n=19)	UC (n=8)	PS (n=65)
Female, %	52.7	92.6	37.5	36.4	78.9	75.0	40.0
Age in years, Mean (range)	47.5 (15–88)	59.3 (33–78)	45.5 (22–63)	46.0 (29–61)	40.5 (20–79)	52.4 (28–78)	50.0 (21–77)
Disease duration in years, mean % (range)	11.7 (0–72.6)	12.1 (0.2–43.2)	10.4 (0.2–28.1)	13.0 (0.5–50.6)	12.4 (0.4–48.5)	10.5 (2.1–22.9)	19.1 (0.3–41.0)
Current severity of the IMiD disease, %							
Mild	51.5	51.9	37.5	63.6	52.6	50.0	70.8
Mild to moderate	22.0	22.2	37.5	9.1	0.0	25.0	13.8
Moderate	14.4	14.8	12.5	9.1	15.8	0.0	7.7
Moderate to severe	8.8	7.4	12.5	18.2	21.1	12.5	6.2
Severe	3.4	3.7	0.0	0.0	10.5	12.5	1.5

Note: RA, rheumatoid arthritis; AS, ankylosing spondylitis; PsA, psoriatic arthritis; CD, Crohn's disease; UC, ulcerative colitis; PS, psoriasis

### PERCEIVED NECESSITY AND CONCERNS ABOUT IMiD TREATMENT

- The mean scores for the BMQ subscales (score range between 1 and 5) indicated a:
  - Relatively high perceived necessity for current treatment:**
    - Overall population:** mean scores of the BMQ-specific Necessity Subscale varied between 3.5–4.2;<sup>4</sup>
    - Portuguese subpopulation:** mean scores of the BMQ-specific Necessity Subscale varied between 4.0–4.3.
  - Higher perceived necessity for TNFis treatment than for conventional treatment**
    - Overall population:** mean scores of the BMQ-specific Necessity Subscale ranged between 3.9–4.2 for TNFis treatment (alone or in combination respectively) and between 3.5–3.9 for conventional treatment (alone or in combination respectively);<sup>4</sup>
    - Portuguese subpopulation:** mean scores of the BMQ-specific Necessity Subscale were 4.3 for TNFis treatment (alone or in combination) and 4.0 for conventional treatment (alone or in combination).
  - Higher perceived necessity than concerns either for treatment with TNFis or conventional treatment**
    - Overall population:** the mean scores for BMQ-specific Necessity Subscale [3.5–4.2] were higher than for the BMQ-specific Concerns Subscale [2.6–3.0];<sup>4</sup>
    - Portuguese subpopulation:** the mean scores for BMQ-specific Necessity Subscale [4.0–4.3] were higher than for the BMQ-specific Concerns Subscale [2.7–3.0]).
  - Most of the patients were either ambivalent (overall population: 37.1%–41.2%;<sup>4</sup> Portuguese subpopulation 34.4%–56.8%) or accepting (overall population: 47.3%–55.5%;<sup>4</sup> Portuguese subpopulation: 36.4%–63.8%) towards their medication (see Figure 4).

Figure 4. Beliefs About Medicines Questionnaire (BMQ): necessity and concerns subscales



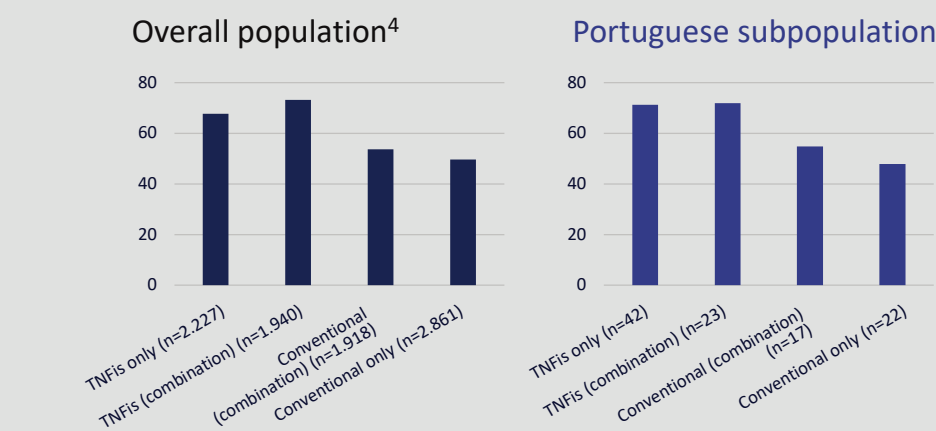
- In the overall population<sup>4</sup>, the percentage of highly adherent accepting patients was significantly (p<0.0001) larger than the percentage of highly adherent ambivalent patients (see Table 3).<sup>4</sup>
- No comparative analysis was made for the Portuguese subpopulation.

Table 3. Overall population: Comparison between highly adherent accepting and ambivalent patients<sup>4</sup>

Overall population: highly adherent patients (MMAS-4 score=4), n(%)							
Monotherapy				Combination treatment (conventional + TNFis)			
Conventional		TNFis		Conventional		TNFis	
Accepting (n=1,347)	Ambivalent (n=1,151)	Accepting (n=1,251)	Ambivalent (n=834)	Accepting (n=900)	Ambivalent (n=739)	Accepting (n=1,031)	Ambivalent (n=780)
751 (55.8)	531 (46.1)	919 (73.5)	504 (60.4)	550 (61.1)	374 (50.6)	800 (77.6)	542 (69.0)

- Both in the overall population<sup>4</sup> and in the Portuguese subpopulation, the percentage of highly adherent patients was higher for treatment with TNFis than with conventional treatment (see Figure 5);

Figure 5. Highly adherent (MMAS-4 score=4) patients per treatment type



## LIMITATIONS

- Group comparisons were not adjusted for confounding factors, which may difficult the interpretation of results;
- The results of patient reported outcomes may have been affected by self-presentation bias, recall bias, and selection bias;
- Although the results for the Portuguese subpopulation seem to be similar to those for the overall population, these should not be directly compared for two main reasons:
  - The respective sample sizes were dramatically different;
  - There may be confounding factors, which may difficult the interpretation of this comparison.

## CONCLUSIONS

Both in the overall population and in the Portuguese subpopulation:

- The largest percentage of patients was either accepting or ambivalent towards their current IMiD treatment;
  - The high percentage of ambivalent patients suggests the need for more effective interventions, during medical visits, for addressing potential erroneous beliefs regarding the prescribed medication;
  - The highest percentage of highly adherent patients was identified among those taking TNFis only or combination treatment (including TNFis).
- In the overall population:
- A significantly higher percentage of highly adherent patients was identified among accepting patients than among ambivalent patients;

## REFERENCES

- Neame R and Hammond A. Rheumatology (Oxford). 2005;44:762–76 7.
- Horne RMorisky , et al. Psychol Health. 1999;14:1–24.
- DE, et al. Med Care. 1986;24:67–74.
- Michetti P, et al. UEG 2014; P1430

### ACKNOWLEDGEMENTS

The authors would like to acknowledge all the patients for their participation. AbbVie would like to thank all investigators and coordinators for their contribution to the success of the ALIGN Study and make it possible.

### DISCLOSURES

ARC, DB and CV are AbbVie employees and may hold stock and/or options. F. Portela received a presenting fee from: AbbVie, Ferring, Lab. Vitoria, MSD and Vifor Pharma. P. Ferreira, P. Lago, A. Barcelos, T. Torres, P. Moura Santos, J. Canas da Silva, L. Leite, A. Vilar declared no conflict of interests. The design, Study conduct, and financial Support for the Study were provided by AbbVie. AbbVie and all authors participated in the interpretation of data, review, and approval of the publication.