limited to non-steroidal anti-inflammatories (NSAIDs) and corticosteroids, treatment options now include synthetic disease modifying anti-rheumatic drugs (sDMARDs) and biologic agents. The development of national registries for inflammatory arthritis provides an opportunity to study medication usage in a large cohort of patients with axSpA. The Ankylosing Spondylitis Registry of Ireland (ASRI) is a source of epidemiological data on patients with axSpA in Ireland. The aim of this study was to examine medication exposure and outcomes.

Objectives: To characterize a large cohort of patients with axSpA in terms of medications usage, burden of disease and patient reported outcomes.

Methods: The patient population registered in the ASRI was analysed using IBM SPSS version 26. Patients were analyzed on the basis of medication exposure. The four treatment groups were classified as no treatment, NSAIDs only, biologics only, or biologics and NSAIDs. Mean age, duration of disease and delay to diagnosis was compared between groups. Burden of disease was assessed via mean BASDAI, BASFI, BASMI, HAQ and ASQoL between the four groups. Differences between groups was tested for statistical significance a one-way analysis of variance (ANOVA). A chi-squared test for independence was used to compare differences in rates of HLA-B27 positivity rates and gender. Results were deemed significant where $p < 0.05$.

Results: At present 860 patients are currently enrolled in the ASRI with 76.6% (659) males and 23.4% (201) females. Average age of patients is 45.8 years, mean disease duration of 19.4 years with 95.5% (821) of patients listed as Caucasian. Mean scores were BASDAI 4.02, BASFI 3.7, BASMI 4.02, HAQ 0.55, and ASQoL of 6.51. Treatment groups were made up of 9.9% (85) on no treatment, 22.2% (191) NSAIDs treatment only, 34.8% (299) biologics treatment only and 32.1% (276) treated with both NSAIDs and biologics. Patients only on NSAIDs were noted to be older than patients on biologics, and those on both biologics and NSAIDs ($p=0.02$). Patients on NSAIDs were older at symptom onset than those on both biologic and NSAID treatment ($p=0.02$), however the effect size is small (0.012). No significant difference was noted between groups regarding disease duration, delay to diagnosis or distribution between genders (table 1). Difference in BASDAI scores between groups was significant between all groups, with patients on both biologics and NSAIDs having the highest scores and those on no treatment with the lowest scores (4.74 vs 3.37) possibly a reflection of disease severity (table 2).

Table 1.

	ASRI	No tx	NSAIDs tx	Biologic tx	Biologic & NSAIDsp	value
Number	860	9.9% (85)	22.2% (191)	37.8% (299)	32.1% (276)	
Age	45.8	49.7	46.2	45.3	45.1	0.02
Symptom onset	26.4	27.5	28.2	26.1	25.2	0.02
Disease duration	19.4	22.2	18	19.1	19.8	0.06
Delay to dx	8	9.8	8.1	7.4	8	0.13

Table 2.

	ASRI	No tx	NSAIDs tx	Biologic tx	Biologic & NSAIDs	p value	Effect Size
BASDAI	4.02	3.37	4.21	3.4	4.74		0.06
		3.37	4.21		4.74	0.04	
		3.37			4.74	<0.01	
			4.21	3.4		<0.01	
				3.4	4.74	<0.01	

Conclusion: A large proportion of patients in the ASRI were treated with either biologics only or both biologics and NSAIDs. No treatment was the least common treatment within this cohort. Patients not on treatment tended to be older than those on any type of treatment. Overall patients on biologics alone tended to have better patient reported outcomes as compared to all other treatment groups. The development of longitudinal data for the ASRI will help to further understand the reason behind these differences.

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AB0705

INCIDENCE, TREND AND FACTORS ASSOCIATED WITH AMYLOIDOSIS IN PATIENTS WITH SPONDYLOARTHRITIS IN SPAIN. OBSERVATIONAL STUDY BASED ON THE REGISTRATION OF DISCHARGES OF THE GENERAL HOSPITALS OF THE NATIONAL HEALTH SYSTEM (CMBD). (TREND-ESPA STUDY)

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Background: Amyloidosis (AA) is a complication of inflammatory diseases, such as Spondyloarthritis (Spa). It is related to active and long-lasting disease. The treatment of Spa has had a major change in recent years, which has allowed a better control of disease activity.

Objectives: Analyze the incidence, trend and factors associated with secondary AA hospitalizations in patients with Spa, in Spain.

Methods: Population study based on the analysis of a national administrative database (CMBD) of hospital admissions. **Period:** 01/01/1999 to 31/12/2015.

Study population: patients with diagnosis of Spa who were admitted to any national hospital. **Control population:** 2 groups have been used as controls: **GP:** group of the general population (without Spa diagnosis) matched of equal sex, age, year and autonomous community as the study population. **RA:** all income, in the same period, of patients diagnosed with Rheumatoid Arthritis (RA). Secondary AA admissions were identified by the presence of code 277.3. The trend was analyzed using Generalized Linear Models (MLG). The Odds Ratio (OR) of secondary amyloidosis was calculated in Spa vs GP and Spa vs AR.

Results: The database (BD) for analysis consists: **1. Study population:** 102,609 admissions with Spa diagnosis. **2. GP:** 102,609 admissions matched with the study population. **3.- RA:** 320,332 admissions. There was a total of 3,790 admissions with AA diagnosis: 782 (0.79%) at Spa, 74 (0.06%) GP and 2,924 (0.91%) RA. The main clinical-demographic characteristics patients with Spa and AA versus the rest of Spa are shown in the following table:

	Spa_ Amyloidosis	Spa_without amyloidosis	OR	IC95%	p-value
N (%)	782 (0,72)	101827 (99,28)			
Mean Age (SD)	55,9 (13,15)	58,9715 (5)	0,98	0,98-0,99	p<0,001
Mean Charlson Index (SD)	1,80 (1,34)	1,14(1,81)	1,15	1,12-1,18	p<0,001
ALOS (SD)	12,78 (15,12)	10,57 (15,37)	1,01	1,00-1,008	p<0,001
Male n (%)	596 (75,2)	70792 (66,56)	1,52	1,29-1,79	p<0,001
Dead during admission, n (%)	82 (10,35)	3537 (3,32)	3,35	2,66-4,22	p<0,001
Areact (%)	20 (2,52)	2178 (2,04)	1,23	0,79-1,93	p=0,318
Spa_EII (%)	81 (10,22)	5238 (4,92)	2,19	1,74-2,77	p<0,001
AS (%)	538 (67,92)	67207 (63,19)	1,23	1,06-1,43	p<0,001
PAs (%)	243 (30,68)	37673 (35,42)	0,8	0,69-0,93	p=0,005
Psoriasis (%)	24 (3,03)	2917 (2,74)	1,1	0,73-1,66	p=0,595
Uveitis (%)	12 (1,51)	542 (0,50)	3,01	1,68-5,34	p<0,001
Diabetes mellitus (%)	34 (4,29)	14822 (13,93)	0,27	0,19 - 0,39	p<0,001
Dementia (%)	3 (0,37)	626 (0,58)	0,64	0,2-2	p=0,638
HTA (%)	185 (23,35)	31395 (29,52)	0,72	0,61 - 0,85	p<0,001
Tabaquismo (%)	56 (7,07)	13283 (12,49)	0,53	0,40 - 0,69	p<0,001
Hiperlipemia (%)	99 (12,5)	17748 (16,68)	0,71	0,57-0,88	p<0,001
TVP (%)	7 (0,88)	648 (0,60)	1,45	0,68-3,07	p=0,351
Depresión (%)	23 (2,90)	5939 (5,58)	0,5	0,33-0,76	p<0,001
Tbc (%)	3 (0,37)	544 (0,51)	0,73	0,23-2,30	p=0,803

The age-adjusted rates (/100,000hab*year) of AA in Spa/GP/RA were 16.72 / 1.40 / 97.87 respectively (19.54 / 1.26 / 139.70 in men and 12.23 / 1.74 / 04.54 in women). Age-adjusted AA rates decreased in both Spa from 19.86/100,000hab*year in 1999, to 9.91 in 2015 and for RA from 131.9 in 1999 to 68.7 in 2015). While in GP increased (from 0.75 in 1999 to 2.87 in 2015). It is estimated a decrease (adjusted by age) in Spa of -4.6% per year and -5.5% in Ra, while in PG there was an increase of 10.2%. The AA OR in Spa vs GP is 10.77 (IC95%: 8,489-13,676). While the AA OR in Spa vs RA was 0.808 (95% CI: 0.747-0.875).

Conclusion: In Spain, during the period 1999 to 2015, there has been a decrease in the incidence of AA in patients with Spa and Ra. We estimate a decrease of -4.6% per year in Spa and -5.5% per year in Ra. Being male, AS or Spa_EII, and uveitis are associated with AA.

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AB0706

ASSOCIATION BETWEEN SARCIDOSIS AND SPONDYLOARTHRITIS: A NEW COMORBIDITY, CHANCE OR SELECTION ERROR? (TREND-ESPA STUDY)

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Background: On literature there are a significant number of cases describing the coexistence between Spondyloarthritis (Spa) and sarcoidosis. There are 3 main ways in which different diseases can be found in the same individual: chance, selection bias, or by 1 or more types of causal association. In this work we analyze whether there is a causal association between sarcoidosis and Spa. **Objectives:** To analyze the hypothesis that there is a causal association between sarcoidosis and Spa.

Methods: Case-control study nested in a population database of hospital admissions (CMBD). **Period:** 1999 to 2015. **Database Study (DB):** Study population + control population. **Study population:** patients with a diagnosis of Spa who were admitted to any national hospital. **Control population (GP):** group of the general population (without Spa diagnosis) matched of equal sex, age, year of admission as the study population. **Cases:** Cases of sarcoidosis were identified by the presence of ICD-9 code 135. **Controls:** admissions without sarcoidosis diagnosis. The clinical-demographic characteristics of patients with Spa and sarcoidosis vs Spa without sarcoidosis are described. To rule out the association being random, the Odds Ratio (OR) was calculated for the association between sarcoidosis and Spa. To minimize selection error, the association with logistic regression models was analyzed by adjusting by more than 50 variables.

Results: The DB of the study consists of 205,218 admissions: 102,609 admissions with Spa and 102,609 admissions without Spa. There was a total of 220 admissions with sarcoidosis: 133 (0.12%) in Spa and 87 (0.08%) in the GP group. The OR is 1.53 (IC95% 1.17 – 2.01). The following table shows the main clinical-demographic characteristics of patients with Spa and sarcoidosis versus the rest of Spa:

	Spa_sar-coidosis	Spa_without_sarcoidosis	OR	IC95%	p-value
N (%)	124 (0.12)	102485 (99.9)			
Mean Age (SD)	56,31 (13.5)	58,94 (15.47)	0,989	0,978-1	0.032
Mean Charlson Index (SD)	1,09 (1.67)	1,15 (1.81)	0,982	0,888-1.087	0.715
Estancia media (SD)	8,52 (7.97)	9,94 (14.05)	0,989	0,972-1	0.049
Male n (%)	75 (60.48)	68534 (66.87)	0,758	0,528- 1.087	0.150
Dead during admission, n (%)	4 (3.22)	3439 (3.35)	0,96	0,354-2.601	1
Areact (%)	0 (0)	2192 (2.13)			1
EspA_Ell (%)	5 (4.03)	5034 (4.91)	0,813	0,332-1.991	0.835
EA (%)	69 (55.64)	63145 (61.61)	0,7815	0,548-1.114	0.195
Aps (%)	55 (44.35)	37758 (36.84)	1,366	0,958-1.947	0.092
Psoriasis (%)	6 (4.83)	2867 (2.79)	1,766	0,777-4.015	0.165
Uveitis (%)	1 (0.8)	542 (0.52)	1,529	0,213-10.962	0.482
Diabetes mellitus (%)	24 (19.35)	14277 (13.93)	1,482	0,949-2.315	0.086
Dementia (%)	1 (0.8)	606 (0.59)	1,366		0.521
HTA (%)	39 (31.45)	30462 (29.72)	1,084	0,742-1.585	0.699
Tabaquismo (%)	20 (16.12)	12833 (12.52)	1,343	0,832-2.168	0.222
Hiperlipemia (%)	17 (13.70)	17322 (16.9)	0,781	0,468-1.303	0.399
TVP (%)	1 (0.8)	627 (0.611)	1,32	0,184-9.465	0.533
Depresión (%)	11 (8.87)	5693 (5.55)	1,655	0,890-3.075	0.114
Amiloidosis (%)	0 (0)	782 (0.76)			1
Eritema Nodoso	5 (4.03)	88 (0.08)	48,89	19,50-122.53	p<0.001
VIH	0 (0)	635 (0.61)			1
VHC	0 (0)	1307 (1.27)			1
VHB	4 (3.2)	320 (0.31)	10,642	3,906-28.992	p<0.001
Obesidad	6 (4.83)	5910 (5.76)	0,83089564	0,365-1.887	0.847

In the logistic regression model (model 1) adjusting by age, sex, and year of admission the OR was 1.459 (IC95% 1.10-1.92). Model 2: Adjusting by model 1 variables + those that were significant in the univariate analysis (EN and HBV) the OR was 1.40 (IC95% 1.06-1.84). Finally, in Model 3, which included model variables 2 + those variables with clinical meaning (out of a total of 50 variables) the OR was 1.38 (IC95% 1.04-1.82).

Conclusion: There is a causal association between sarcoidosis and Spa (OR 1.5). This association is ruled out by chance. Although selection bias cannot be completely ruled out, it is reasonably minimized in our study.

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AB0707 IS ANKYLOSING SPONDYLITIS ASSOCIATED WITH INCREASED MALIGNANCY RISK?

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Background: Increased cancer risk has been reported with rheumatoid arthritis (RA) and systemic lupus erythematosus (SLE). Few studies on malignancy risk in ankylosing spondylitis (AS) patients have provided conflicting data.

Objectives: To look at the risk of cancer in AS patients in the US and identify any risk factors associated with increased cancer frequency.

Methods: This is a retrospective observational study using the IBM Explorys data base: a pooled de-identified clinical data base of > 60 million unique patients in the US with patient level data. The Explorys collects aggregated, standardized and normalized clinical data from different electronic health records automatically updated in near real time. In Explorys, patient records are mapped into a single set of Unified Medical Language System ontologies to facilitate searching and indexing. Diagnoses, findings and procedures are mapped into the systematized nomenclature of medicine – clinical terms (SNOMED-CT) hierarchy. Criteria of AS included at least one visit with a rheumatologist and the diagnosis code of AS (N=14,310) between 2009-2019. We further stratified the cohorts by adding the following variables to the search tool: race, gender, smoking, laboratory data (elevated ESR and CRP, HLA-B27 status), extra articular manifestations (psoriasis, inflammatory bowel disease or uveitis) and medication use (TNF inhibitor, secukinumab or NSAIDs). The index date was defined as the date of the first ever malignant neoplastic disease diagnosis occurring after the qualifying AS diagnosis.

The controls group (24,542,770) included all adults ≥ 18 years of age with exclusion of positive ANA, diagnosis of RA, SLE, AS, or vasculitis, and at least one outpatient office visit during the study period. For both groups we excluded previous diagnosis of cancer prior to 2009. A chi-square test of association was performed between the 2 groups (AS patients and controls) and the odds ratio (OR), its standard error, and the 95% confidence interval (CI) were calculated.

Results: Of the 14,310 patients with AS, only 1300 (9.08%) patients had a cancer diagnosis compared to 2,719,240 controls (11.07%). The AS patients found to have decreased odds of cancer compared to control group (Odds ratio 0.9004, 95 % CI: 0.8502 to 0.9536, P = 0.0003). Demographics and clinical characteristic of AS patients and controls with cancer are shown in table 1. Risk factors for increased cancer risk in AS patients are shown in table 2.

Conclusion: The study demonstrated that cancer risk was lower in the AS patients in the USA compared to the controls with no rheumatic disease. Male sex, white race, HLA-B27 positivity, history of IBD, NSAIDs use, and elevated makers of inflammation were associated with higher odds of cancer in AS patients.

Table 1. Demographics and other features of patients with cancer.

	AS patients with Cancer (n=1300)	Controls with Cancer (n=2,719,240)
Caucasians	85.38%	82.09%
Males	53.08 %	45.53%
Smokers	30.00%	22.22%
Elevated ESR	44.61%	10.20%
Elevated CRP	44.61%	10.25%
NSAID use	76.92%	47.20%

Table 2. Risk factors for cancer in patients with AS using chi-square test.

	AS with cancer N = 1300	AS without cancer N=11,350	P value
Male	690 (53.08%)	5690 (50.13%)	0.04
Female	610 (46.92%)	5650 (49.78%)	0.05
White	1110 (85.38%)	8980 (79.12%)	<0.0001
African American	70 (5.38%)	930 (8.19%)	0.0004
Psoriasis	180 (13.85%)	1510 (13.30%)	0.56
IBD	120 (9.23%)	520 (4.58%)	<0.0001
Uveitis	180 (13.85%)	1480 (13.04%)	0.41
Smoking	390 (30%)	2910 (25.64%)	0.0007
Elevated ESR	580 (44.61%)	3490 (30.75%)	<0.0001
Elevated CRP	580 (44.61%)	4240 (37.36%)	<0.0001
HLA B27 positivity	110 (8.46%)	760 (6.7%)	0.018
TNFI	530 (40.77%)	4840 (42.64%)	0.2
Secukinumab	50 (3.85%)	360 (3.17%)	0.19
NSAIDs	1000 (76.92%)	7660 (67.49%)	<0.0001

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