Table 1. Clinical and laboratory characteristics of subjects studied

	AAS(n=30)	IAS(n=30)	HC(n=30)	P value
Gender, F/M	8/22	8/22	10/20	0.805
Age, mean±SD (years)	36.23±10.86	33.47±10.42	35.8±10.84	0.467
Disease duration, mean±SD(years)	9.55±6.34	7.8±6.55	-	0.205
Family history,positive/tested (%)	4/30(13.33%)	2/30(6.67%)	-	0.667
BASDAI, mean±SD	5.2±0.98	2.24±1.31	-	0.000
BASFI, mean±SD	3.2±2.34	0.74±0.99	-	0.000
Uveitis,positive/tested (%)	6/30(20%)	3/30(10%)	-	0.470
CT grading of sacroiliac arthritis, I/II/III/IV	5/14/11	12/14/4	-	0.014 ^a
HLA-B27,positive/tested (%)	29/30(96.67%)	25/30(83.33%)	-	0.000
ESR, mean±SD (mm/h)	58.83±27.04	15.63±12.75	5.97±3.18	0.000
hsCRP, mean±SD (mg/L)	36.6±31.14	5.9±5.54	1.09±2.11	0.000
WBC, mean±SD (10 ⁹ /L)	7.99±1.62	6.98±1.81	5.94±1.09	0.028
GLOB, mean±SD (g/L)	40.3±6.08	33.44±3.93	32.85±4.55	0.000

BASDAI: bath ankylosing spondylitis disease activity index, *BASFI*: bath ankylosing spondylitis functional index, *HLA-B27*: Human leukocyte antigen B27. *ESR*: erythrocyte sedimentation, *WBC*: leukocyte, *GLOB*: globulin, a: the *P* value of the non-parametric Mann-Whitney test.

2. Comparison of the two lncRNAs expression among the three groups (Figure 1)

Figure 1. Expression of lncRNA-NR_003542 and NR_026756 among three groups

3. Correlations between levels of two lncRNAs expression s and clinical data in AS patients (Figure 2)

Figure 2. Correlations between levels of two lncRNAs expression and clinical data in AS patients

Conclusion: Altered expression of lncRNA-NR_003542 and NR_026756 in peripheral blood of AS patients might be involved in the pathogenesis of AS, higher expression of lncRNA-NR_003542 and lower expression of NR_026756 might be as the biomarkers for the disease activity of AS, further study would be needed to expound on the exact role of the two lncRNAs in AS.

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Spondyloarthritis – treatment

FRI0372 DMARD TREATMENT AND OPIOID USE IN EARLY SPONDYLOARTHRITIS IN FINLAND

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Background: Disease-modifying anti-rheumatic drugs (DMARDs) are introduced for the treatment of spondyloarthritis (SpA) after failure of non-steroidal anti-inflammatory drugs (NSAIDs). In Finland, try out with a conventional synthetic DMARD (csDMARD) is required before initiation of biologicals (bDMARD). The patients with DMARDs are eligible for a higher reimbursement for the cost of medication. Opioids are not recommended for arthritis pain.

Objectives: To report the current DMARD and pain medication use among newly-onset SpA patients in Finland.

Methods: From the nationwide reimbursement register maintained by the Social Insurance Institution of Finland we collected all incident adult patients with SpA (ICD-10 codes M45-46) between 2010-14 and divided them into two groups depending on whether bDMARDs were subsequently initiated (group B) or not (group A). Patients' drug purchases between 2009-15 were obtained from the Drug Purchase Register. Opioid use by these patients was evaluated one year before and after the index date (ID; the date when special reimbursement for antirheumatic drugs became effective), and compared to age, sex, and place of residence matched population controls. Intravenously administered bDMARDs (e.g. infliximab) were not included.

Results: We identified 3577 SpA patients, 23% of which started a self-injected bDMARD during the observation period. More of the patients in group B needed pain medication, prednisolone, methotrexate, or other csDMARDs than sulphasalazine, which was more frequent in group A (table 1). Fifty-eight percent of the patients in group B started their bDMARD already within one year from ID (table 1). Overall, 29.8% of the SpA patients compared to 8.1% of the controls purchased opioids at least once during the year before ID. Patients' opioid purchases peaked during the last 3-month period before ID; risk ratios (RR) were 4.23 (95% confidence interval (CI) 3.63 to 4.84) and 6.23 (5.23 to 7.41) in patient groups A and B, respectively, compared to controls. SpA patients who had at least one opioid purchase during 12 months preceding the ID were 1.58 times more likely to start a bDMARD than those who did not purchase any opioids.

Conclusion: Only one of four early SpA patients in Finland were initiated a self-injected bDMARD during 2010-15. The use of opioids before SpA diagnosis appears to be nearly four times more common among SpA patients compared to population controls, and early opioid purchases may act as a surrogate marker for further bDMARD initiation.

Table 1. Data on incident SpA patients between 2010-14, divided into two groups depending on whether bDMARDs were introduced (group B) or not (group A). Pain medication and DMARD use during the whole first year after the ID are shown.

	Group A N=2741	Group B N=836	p-value
Age, mean (SD)	39 (13)	38 (11)	0.16
Proportion of females,%	53	49	0.048
Pain medication,%			
Paracetamol	21.1	24.9	0.020
NSAID	71.9	78.5	<0.001
Opioid	18.2	33.0	<0.001
DMARDs			
None	3.6	0.2	
Methotrexate	29.9	53.8	<0.001
Sulphasalazine	84.5	78.6	<0.001
Prednisolone	33.8	47.0	<0.001
Other csDMARDs	6.5	9.8	<0.001
bDMARDs	0	58.0	..

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FRI0373 5-YEARS TREATMENT EFFECT OF TNF ALPHA INHIBITOR IN EARLY AXIAL SPONDYLOARTHRITIS AND ASSOCIATED FACTORS: AN INVERSE PROBABILITY WEIGHTING ANALYSIS OF THE DESIR COHORT

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Background: Only scarce data is available on the long-term treatment effect in a real-life setting (i.e. effectiveness) of TNFi in early axial SpA forms and its predisposing associated factors; furthermore, unbiased evaluation of treatment effect in non-randomized clinical trials is challenging, and new methods have been developed to overcome prescription bias.

Objectives: a) to estimate the probability to initiate a TNFi over 5 years of follow up in real life setting using novel statistical methods to overcome prescription bias; b) to determine the long-term effectiveness of first TNFi and its predictive factors.

Methods: Observational prospective French cohort (DESIR) with 5 years of follow-up, including 708 TNFi-naïve patients early axial spondyloarthritis. Study visits were scheduled every 6 months in the first two years of follow up then yearly up to 5 years. Treatment (TNFi or other) was at the discretion of the treating rheumatologist's. The probability to initiate a TNFi was estimated by the Kaplan Meier Method, assuming non informative dropouts. Effectiveness of the first TNFi was defined as the probability to reach an ASAS40 response in both groups (TNFi vs. any other treatment) after at least 10months of exposure. To evaluate treatment effect and overcome prescription bias repeatedly occurring over time, we have applied an iterative method based on inverse propensity score (PS) weighting using a marginal structural model, that allows the integration of the repeated weights derived from the propensity score at each visit (i.e. the probability to receive the treatment at each visit). The structural model used for this analysis was a PS-weighted cox regression, to estimate the probability to present an ASAS40 response after at least 10 months of treatment. Factors predicting first TNFi effectiveness, were explored by Cox (univariate and then multivariate) regression models.

Results: Of the 708 patients included in the analysis, 258 patients initiated a first TNFi during the first five years of follow up. The probability to initiate a TNFi treatment was 41.3% [95%CI 37.2-45.1]. Among the 258 patients who received a first TNFi, 163 (63.2%) were exposed for at least 10 months. On the original data, ASAS40 response was observed in 50/163(30.7%) vs. 58/450(12.9%) patients from the TNFi and usual care groups, respectively. The likelihood of an ASAS40 response was greater in the TNFi exposed group (HR= 3.3[95%CI 2.9-3.8], p <0.0001). Male gender (HR=1.5[95%CI 1.1-2.1]), HLAB27+ (HR= 1.4 [95%CI 1.1-2.0]) and the presence of at least one objective sign of inflammation

(MRI or CRP) or structural damage (radiographic sacroiliitis) (HR= 1.7 [95%CI 1.2-2.4]) were jointly predictive of an improved outcome.

Conclusion: Our study, applying novel statistical techniques to overcome prescription bias, confirms the 5-year effectiveness of TNF alpha inhibitors (TNFi) in patients with early axial Spondyloarthritis (axSpA), and we confirm that male gender, with HLAB7 positive and the presence of at least one objective sign of inflammation or structural damage are more frequently associated with such effectiveness.

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FRI0374 THE RISK OF INFECTION BY TUMOR NECROSIS FACTOR INHIBITORS AND ITS ASSOCIATED FACTORS IN PATIENTS WITH ANKYLOSING SPONDYLITIS: RESULT FROM KOREAN NATIONAL HEALTH INSURANCE DATA

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Background: Tumor necrosis factor inhibitors (TNFi) are effective in patients who do not respond to non-steroidal anti-inflammatory drugs, or disease modifying anti-rheumatic drugs, and have been widely used in patients with ankylosing spondylitis (AS). However, there is some evidence that treatment with TNFi can increase the risk of infection in patients with AS.

Objectives: The aim of this study was to investigate the risk of infection in patients with AS treated with TNFi.

Methods: Data was obtained from insurance claims database of the Health Insurance Review & Assessment Service (HIRA) in South Korea. Patients who have been prescribed a TNFi such as etanercept (ETN), adalimumab (ADA), golimumab (GLM), and infliximab (IFX) to treat AS from 1 July 2012 to 30 June 2017 were enrolled. We evaluated the incidence rate (IR) and hazard ratio (HR) of serious infections including pneumonia, tuberculosis, and herpes zoster in each TNFi treatment group by using cox proportional hazard model. We further analyzed the HR of infection by sex.

Results: A total of 2,515 patients were included in the study, and they were prescribed ETN (n=528), ADA (n=914), GLM (n=628), or IFX (n=445). The IRs of serious infection were 1668.63, 1489.88, 1457.58, and 1399.16 per 1,000 person years (pys) in ETN, ADA, GLM, and IFX treated groups, respectively. There was no significant difference in HR of serious infection between the TNFi groups. In the subgroup analysis of major infections, there was no difference in the HR of pneumonia between TNFi groups. However, the HR of tuberculosis with IFX group was significantly higher than that with ETN (adjusted HR 8.95, 95% CI: 1.12-71.4). In herpes zoster infection, there was no difference between TNFi groups in all patients, but the adjusted HRs significantly increased with GLM (adjusted HR 15.40, 95% CI: 1.64-144.34) and IFX (adjusted HR 10.02, 95% CI: 1.12-89.9) treatment as compared to ETN in female patients.

Conclusion: Patients receiving IFX had a higher risk of contracting tuberculosis than those receiving ETN. Moreover, the risk of herpes zoster was higher in female patients treated with GLM and IFX than in those treated with ETN in Korea.

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