

Estimating the Prevalence, and Describing the Medical History and Treatment Patterns of Patients with Non-radiographic Axial Spondyloarthritis in Germany – An Approach using a Claims Database

PMS11

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BACKGROUND

- Non-radiographic axial spondyloarthritis (nr-axSpA) is an immune-mediated inflammatory rheumatic disease, especially affecting the spine and sacroiliac joints (1).
- It is intensively discussed whether nr-axSpA should be considered as a distinct disease or as an early stage of ankylosing spondylitis (AS) (2, 3).
- There is no separate code for nr-axSpA in the German ICD-10-GM coding system and it is coded with the same code for AS since 2014 (4).
- Very limited information is available regarding prevalence, patient history, and biological treatment patterns in nr-axSpA patients in Germany.

OBJECTIVES

- The aim of the study was to apply a claims data specific algorithm to identify possible nr-axSpA patients in a German claims database.
- Further objectives included the estimation of the prevalence, and the description of the medical history as well as the biologic treatment patterns in nr-axSpA patients in Germany.

METHODS

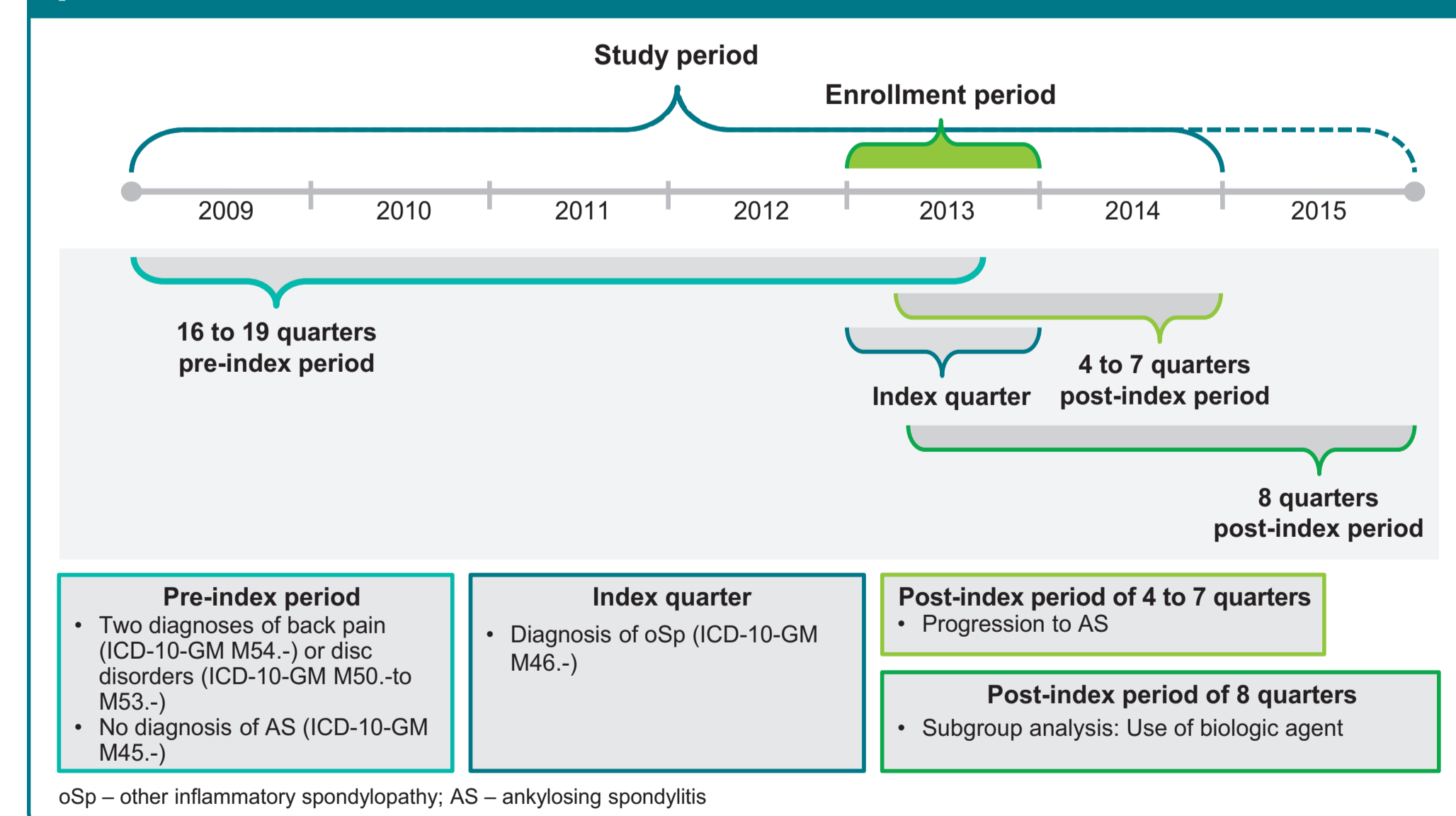
Data source

- This retrospective database study used claims data from the German "Institut für angewandte Gesundheitsforschung Berlin" (InGef) research database, which has anonymized claims data of about 4 million insured individuals.
- This sample represents 5.6% of the Statutory Health Insurance population and 4.8% of the German population and has been adjusted to represent the German population in terms of age and gender.

Study design and patient selection (Figure 1)

- The study considered data from 01 January 2009 through 31 December 2015. Patients continuously observable in the database from 01 January 2009 through 31 December 2014 were included.
- The enrollment period was defined as the year 2013 leading to:
 - Pre-index period from 01 January 2009 until the index quarter in 2013 (16 to 19 quarters depending on the index quarter)
 - Post-index period from the index quarter until 31 December 2014 (4 to 7 quarters depending on the index quarter and the end of post-index period)
- Furthermore, a subgroup of patients observable for an 8 quarters post-index period until 31 December 2015 was analyzed for biologic treatment patterns.
- A claims-data specific algorithm developed by Boonen and colleagues (5) to identify nr-axSpA patients was adopted to the German setting and reviewed by two German rheumatologists.
- Patients were identified as nr-axSpA patients if they showed a diagnosis of other inflammatory spondylopathy (oSp) based on the German ICD-10-GM code (M46.-) in 2013 (index quarter), had a history of at least two diagnoses of back pain (M54.-) or disc disorders (M50.- to M53.-) and no diagnosis of AS (M45.-) in the pre-index period.

Figure 1. Study design and identification approach of nr-axSpA patients in German claims data



Assessment of Outcomes

- The diagnostic prevalence rate of nr-axSpA in Germany was assessed by dividing the number of patients identified by the algorithm for nr-axSpA by the total number of patients in the database during the study period (N=3,319,177) in 2013.
- The progression rate to AS was defined as the number of prevalent nr-axSpA patients in 2013 with an ICD-10-GM diagnosis code M45.- for AS in the post-index period of at least 4 quarters.
- The medical history was analyzed in the pre-index period and included the underlying comorbidities (based on ICD-10-GM codes) as well as outpatient visits and the utilization of MRI or X-rays identified by German reimbursement codes (EBM codes).

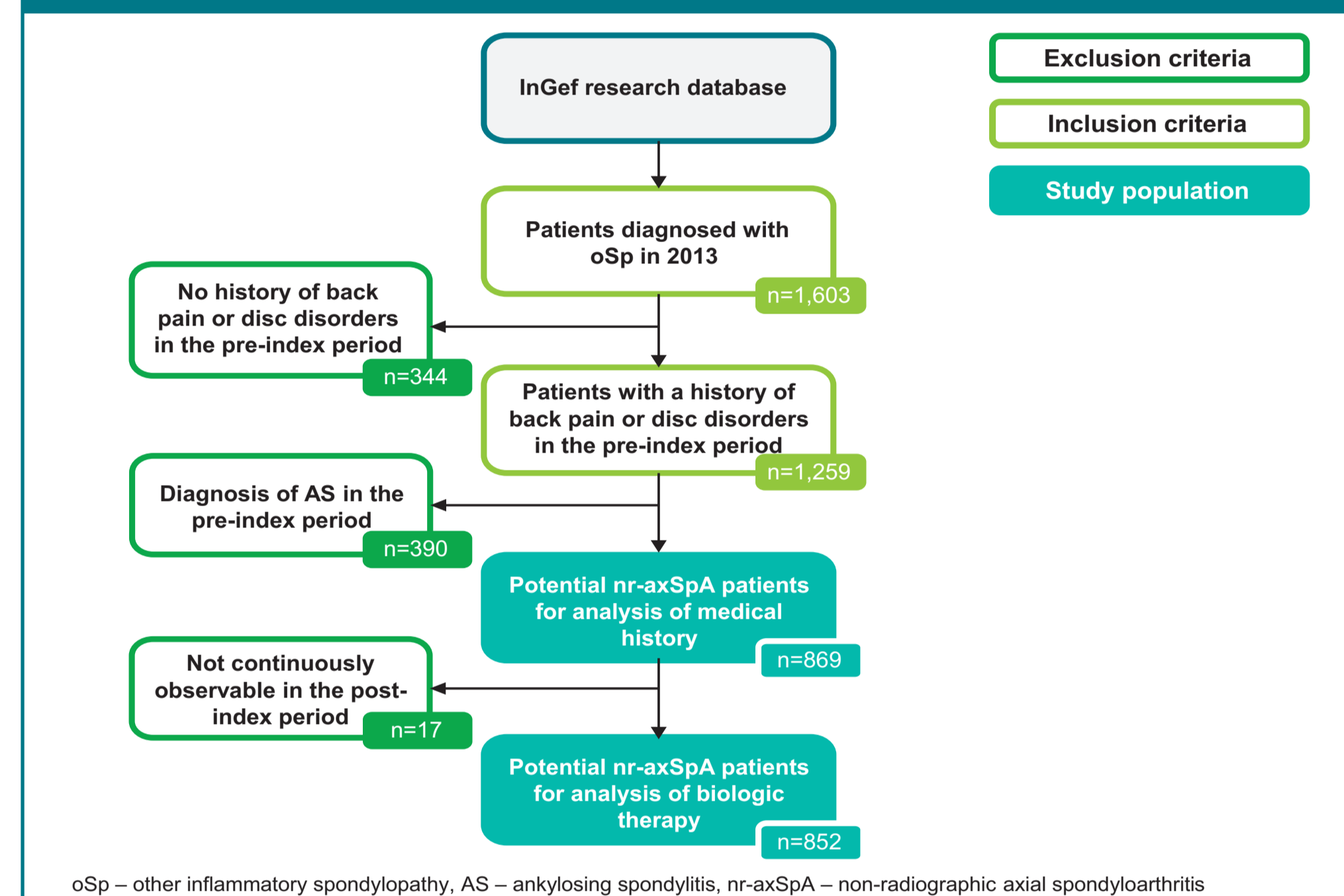
- For biologic treatment patterns, the number of patients with a prescription for adalimumab, certolizumab pegol, etanercept, infliximab, golimumab, or no biological treatment identified by Anatomical Therapeutic Chemical (ATC) codes in the outpatient setting and by Operation and Procedure (OPS) codes in the inpatient setting was assessed.

RESULTS

Study population, prevalence and progression rate

- After applying the algorithm, a total of 869 possible nr-axSpA patients were identified in the InGef database (Figure 2), resulting in a 2013 prevalence of 26.2 per 100,000 persons (0.03%) in Germany.
- For the subgroup analysis of biological treatments, 852 patients were available (Figure 2).
- Almost two-thirds of the potential nr-axSpA patients were female (64%), the mean age was approximately 58 years, and the largest portion of patients (22%) were between 70-79 years old.
- The progression rate of the prevalent nr-axSpA patients to AS in the post-index period spanning from the index quarter until 31 December 2014 was 13%.

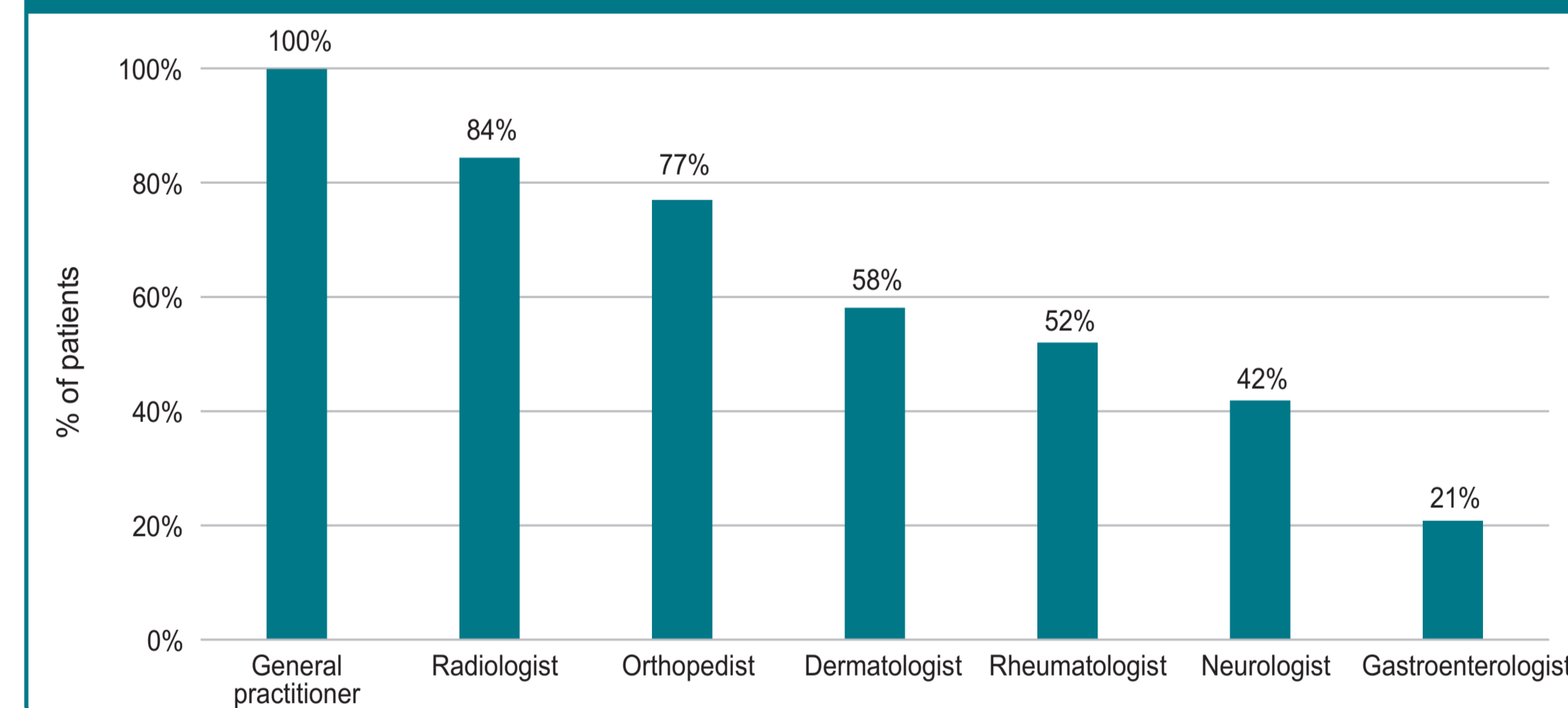
Figure 2. Selection of nr-axSpA patients from the InGef research database



Patient medical history in the outpatient sector

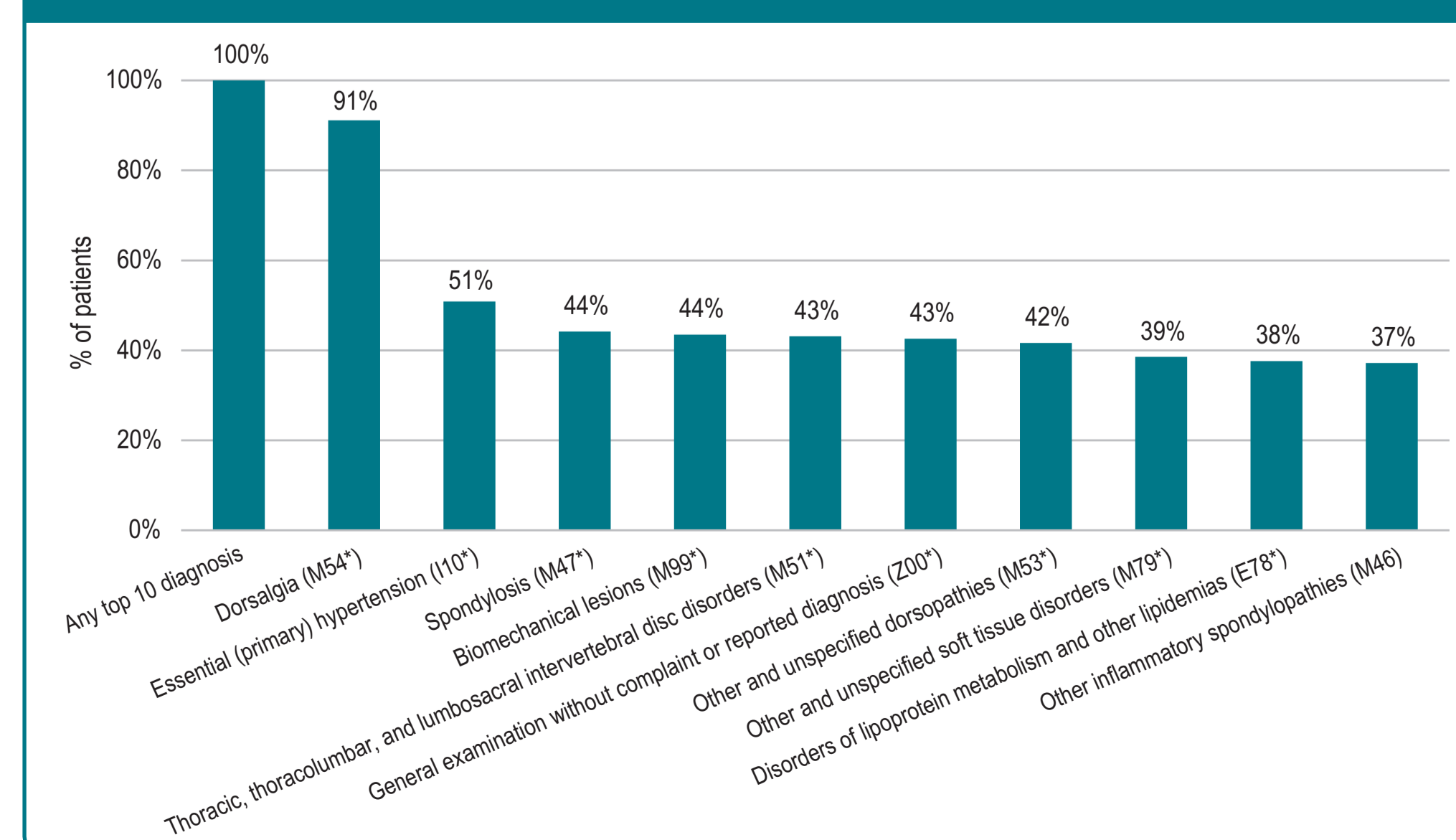
- In the pre-index period, all patients visited outpatient physicians, which included radiologists (84% of patients), orthopedists (77%), dermatologists (58%), and rheumatologists (52%) (Figure 3).
- The mean number of visits at the rheumatologists was 14.5 in the pre-index period (approximately 3.6 visits per year), while orthopedists were visited 12.8 times on average (approximately 3.2 visits per year).

Figure 3. Percentage of patients with outpatient visits stratified by physician specialties in the pre-index period before the other inflammatory spondylopathy diagnosis in 2013



- The analysis of the most frequently coded diagnoses in the pre-index period showed that most of the identified top 10 diagnoses were related to nr-axSpA with dorsalgia coded by physicians in 91% of nr-axSpA patients (Figure 4).
- Essential primary hypertension as a non-rheumatological comorbidity was diagnosed in 51% of the identified patients (Figure 4).

Figure 4. Most frequent ICD-10-GM codes in the pre-index period before the other inflammatory spondylopathy diagnosis in 2013

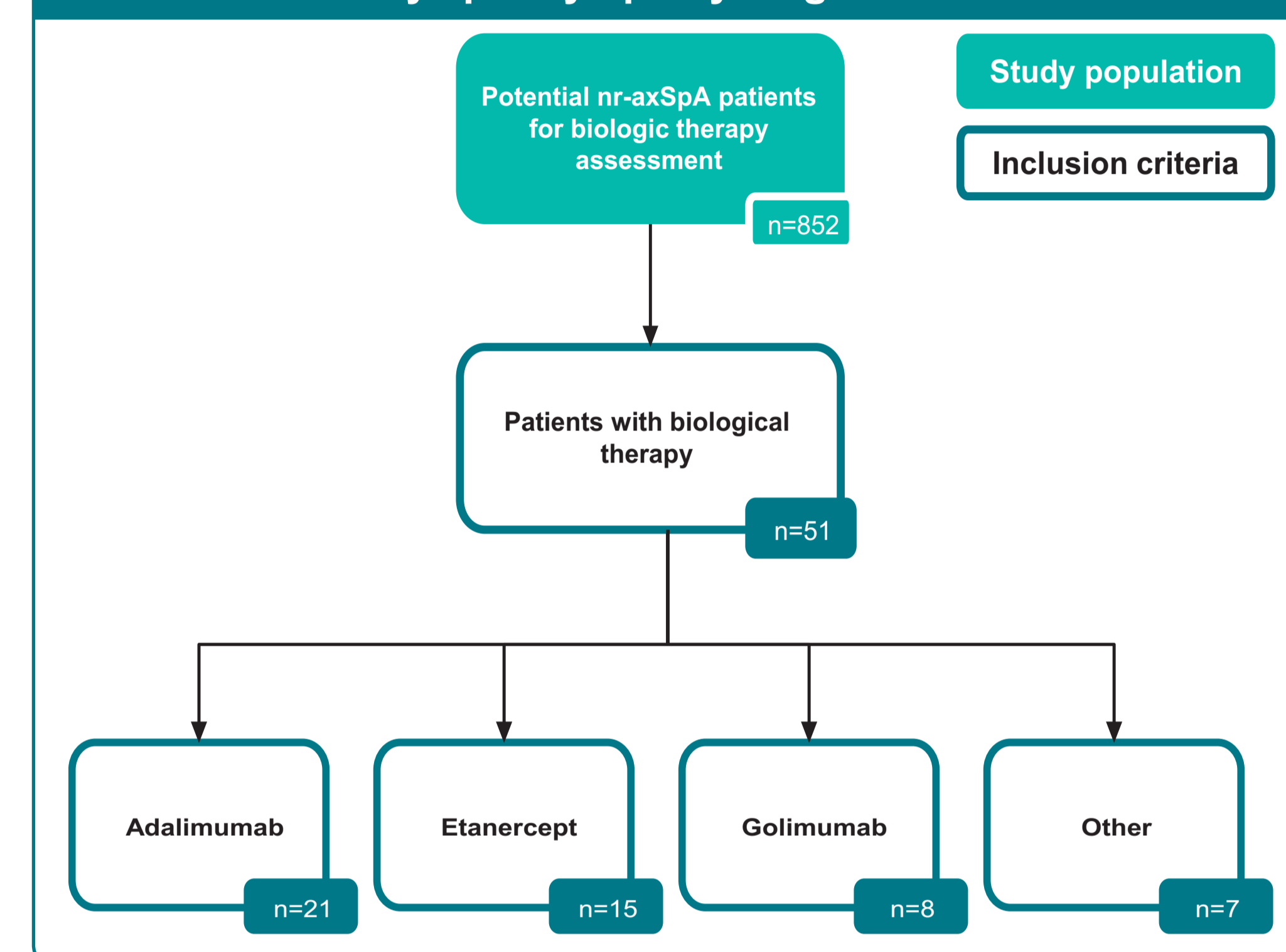


- An MRI assessment was performed in 34% of nr-axSpA patients whereas 61% had an X-ray assessment during their medical history. More than two-thirds of the nr-axSpA patients (71%) had at least one MRI or X-ray assessment.

Biological treatments

- Only 6% (n=51) of the nr-axSpA patient subgroup (N=852) had a prescription of biological therapy during the post-index period. Out of these, 41% (n=21) received adalimumab as first biological therapy, 29% (n=15) etanercept, and 16% (n=8) golimumab (Figure 5).
- The prescription level analysis revealed that the 51 patients treated with biological agents received 316 biological prescriptions in total (mean=6.2).
- Most of the patients (71%) received their first biological prescription from rheumatologists.

Figure 5. Biological therapy in the post-index period after the other inflammatory spondylopathy diagnosis in 2013



LIMITATIONS

- The identification of nr-axSpA patients with claims data is challenging as there is no specific ICD-10-GM code established in the German healthcare system to distinguish between AS and nr-axSpA.
- The applied algorithm is limited to the fact that the coding of other inflammatory spondylopathy might be inaccurate and incomplete.
- In German claims data, no results of MRI, X-ray assessments, and laboratory tests are available and therefore, could not be used for the classification of disease.
- Our approach to identify nr-axSpA patients is not able to distinguish between incident and prevalent nr-axSpA patients.
- Outpatient diagnoses are only recorded on a quarterly basis which is why the biological prescriptions could not be clearly linked to nr-axSpA.

CONCLUSIONS

- The classification of nr-axSpA patients is challenging and the differentiation to AS is still difficult.
- Contrary to expectations, rheumatologists were not the most frequently visited physicians by the potential nr-axSpA patients.
- Additional studies based on claims data would greatly benefit from the establishment of a separate ICD-10-GM code for nr-axSpA in Germany.

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