PATIENT CHARACTERISTICS AND INCIDENCE OF SIGNS OF INFLAMMATION IN PATIENTS WITH NEW ONSET OF NON-SPECIFIC MUSCULOSKELETAL SYMPTOMS AND POSITIVE ANTI-CITRULLINATED PEPTIDE POINT-OF-CARE TEST IN GERMANY — THE PANORA TRIAL

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Background: Rheumatoid Arthritis (RA) is a chronic inflammatory joint disease affecting approx. 1% of the adult population of Northern Europe. Strategies for its early detection and diagnosis are of high importance as prompt treatment improves clinical and structural outcome. Formation of autoantibodies against cyclic citrullinated proteins (anti-CCP) are identified to be associated to RA development. Non-specific musculoskeletal (mSki) pain often precedes early RA development. Often, patients with initial symptoms are referred to General Practitioners (GP) without access to a sensitive rheumatologic assessment.

Objectives: To evaluate incidence of patients with positivity in anti-CCP rapid test and signs and symptoms of subclinical and clinical inflammation in a on risk population for RA.

Methods: In this prospective study (PANORA), 980 patients with new onset of mSki pain at GP were included in 77 GP sites in Germany. In case of positivity in anti-CCP rapid test (CCPoint®), patients were referred to Rheumatology Department (RD) for assessment and RA-evaluation. At RD, validation of anti-CCP testing (using ELISA) and a rheumatological examination including ultrasound was performed. Subclinical signs of inflammation defined as increase of microvascularisation were monitored by Fluorescence-optical imaging (FOI). In case of ELISA positivity but missing clinical evidence of RA, patients are monitored every 6 months for a total follow-up of 36 months or until RA-diagnosis.

Results: Data from 980 patients with completion of visits at GP and/or RD was analyzed from which 9.8% (n=94) of the patients showed a positive anti-CCP rapid-test at GP. At RD, 21% (n=25) of the rapid-test positive patients were confirmed anti-CCP-positive by ELISA. 10 patients were diagnosed with RA (1 in the ELISA negative group), thereof one case of a newly detected RA at month 6 of the follow-up period. In the three groups at baseline (figure 1), age was well balanced, the proportion of female patients was highest in the RA-diagnosis cohort (80%) as well as the proportion of patient with current or past smoking-status (40% vs. 22.2% in the RA-ELISA group).

Conclusion: Here, for the first time data from patients suspect for RA development (non-specific musculoskeletal pain within the last 6 months) and screened using anti-CCP point-of-care test at GP are reported. Within the group re-evaluated at RD due to positive point-of-care test, only 21% were confirmed positive using ELISA testing. In the screened population, already 10 patients were diagnosed as RA at RD including 1 patient in the follow-up period until now. The con- tinuation of the PANORA patients in the follow-up period will give more insights in specific characteristics of the RA-risk population at early stages of the disease when combining serological and imaging markers using ultrasound and FOI.

Figure 1. Study Flow Chart

Disclosure of Interests: Michaela Koehm Grant/research support from: BMS, Pfizer, Janssen, Consultant for: Pfizer, Celgene, Janssen, Speakers bureau: Pfizer, Celgene, Janssen, Ulf Henkemeier Grant/research support from: BMS, Tanja Rossmann Grant/research support from: BMS, Pfizer, Janssen, Karola Mergenthaler: None declared, Juliana J. Petersen: None declared, Harald Burkhardt Grant/research support from: BMS, Pfizer, Janssen, Consultant for: Abbvie, BMS, Pfizer, Janssen, Roche, Chugai, Speakers bureau: AbbVie, BMS, Pfizer, Janssen, Roche, Chugai, Frank Behrens Grant/research support from: AbbVie, Pfizer, Roche, Chugai, Prophyl, Bioline, Novartis, Consultant for: AbbVie, Pfizer, Roche, Chugai, UCB, Bristol-Myers Squibb, Celgene, MSD, Novartis, Biotest, Janssen, Genzyme, Eli Lilly, Speakers bureau: Ad board: AbbVie, Pfizer, Roche, Chugai, UCB, Bristol-Myers Squibb, Celgene, Novartis, Biotest, Janssen, Genzyme, Eli Lilly. DOI: 10.1136/annrheumdis-2019-eular.4833

EXPLORING HETEROGENEITY IN RHEUMATOID ARTHRITIS: PATIENT PROFILING THROUGH PRINCIPAL COMPONENT AND CLUSTER ANALYSIS OF THE BRASS REGISTRY

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Background: Data-driven principal component (PC) and cluster analysis has the potential to identify previously unknown patient subgroups within a rheumatoid arthritis (RA) registry to establish prognosis, predict disease trajectory, and help inform treatment.

Objectives: The Brigham and Women’s Rheumatoid Arthritis Sequential Study (BRASS), established in 2003, is a single-center, prospective observational registry cohort providing a comprehensive set of clinical disease activity measures in >1400 patients with RA. Our objective was to use PC and cluster analysis of base-line demographic, socio-economic, health and disease characteristics in BRASS to identify and characterize distinct patient clusters in RA.

Methods: Patients variables recorded at entry into BRASS were refined and combined using PC analysis to reduce dimensionality and collinearity. The number of PCs was established by eigenvalue >1, cumulative variance, and interpretability. Patients were clustered using a k-means approach with non-hierarchical, exclusive, and complete clustering, with minimum cluster size 5% of population, and maximum 19 clusters. The final number of clusters was determined according to the cubic clustering criterion and pseudo F.

Results: Analysis of baseline data from 1443 patients identified 41 PCs that capture the fundamental characteristics involved in RA. Cluster analysis distinguished 5 patient clusters. Each cluster reflected a different profile of PCs, and can be described based on overall health, RA disease activity and duration (Table). Key differentiators between clusters include comorbidity PCs (metabolic comorbidities predominate in cluster 1, neurologic in cluster 4, and orthopedic in cluster 5) and patient characteristics/social PCs (greatest number of doctor visits and family history of MI in cluster 3, greatest BMI in cluster 1, highest income in cluster 2, lowest income in cluster 5, and least emotional support in cluster 1).

Summary of clusters

Table: Principal components across the five RA phenotype clusters

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<th>Cardiovascular</th>
<th>Neurologic</th>
<th>Orthopedic</th>
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</table>

Conclusion: Data-driven cluster analysis of RA patient characteristics at entry into the BRASS registry identified five distinct patient phenotypes, providing a convenient method to potentially derive novel insights into the multifactorial drivers, commonly co-occurring health conditions, and manifestations of RA. Investigation of longitudinal outcomes in these different clusters in the BRASS registry and validation in an independent dataset is ongoing.


Disclosure of Interests: Adelphi (Aded 27 May 2019) provided by Sanofi and Regeneron Pharmaceuticals, Inc.


THURSDAY, 13 JUNE 2019

SLE, Sjogren and APS: systemic autoimmunity in the real life

OP0124 DO ALL ANTIPOPHOSPHOLIPID ANTIBODIES CONFER THE SAME RISK FOR MAJOR ORGAN INVOLVEMENT IN SLE PATIENTS?

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Background: Antiphospholipid antibodies (aPL) have been associated with organ damage and certain features in SLE patients.