OP0121

PATIENT CHARACTERISTICS AND INCIDENCE OF SIGNS OF INFLAMMATION IN PATIENTSWITH 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 (nsMSK) 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 nsMSK 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 continuation 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.

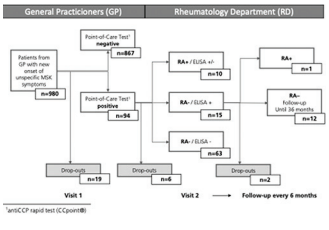

Figure 1. Study Flow Chart

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OP0122

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

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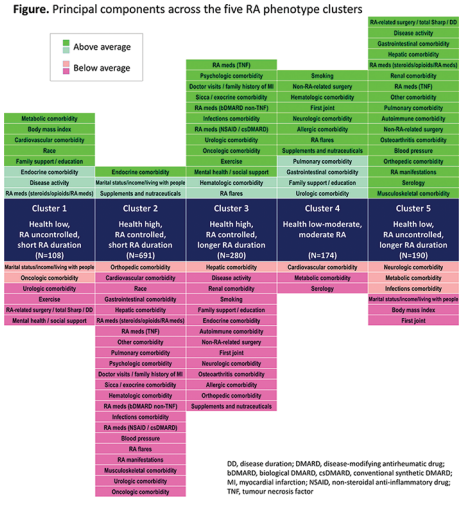
Background: Data-driven principal component (PC) and cluster analysis has the potential to identify previously unknown patient subgroups within a rheumatoid arthritis (RA) registry to establish prognosis, predict disease trajectory, and help inform treatment.
Objectives: The Brigham and Women's Rheumatoid 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 baseline demographic, socio-economic, health and disease characteristics in BRASS to identify and characterize distinct patient clusters in RA.
Methods: Patient 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

	N	Summary descriptor	Patients, %				
			≤1 comorb-idity*	CDAI ≤10	RA duration, years		
					<5	5–20	>20
1	108	Health low, RA uncontrolled, short RA duration	30%	28%	37%	38%	25%
2	691	Health high, RA controlled, short RA duration	59%	43%	46%	37%	17%
3	280	Health high, RA controlled, longer RA duration	48%	46%	24%	45%	31%
4	174	Health low-moderate, moderate RA	36%	36%	26%	50%	24%
5	190	Health low, RA uncontrolled, longer RA duration	7%	24%	12%	33%	55%

*Charlson Comorbidity index

Figure. Principal components across the five RA phenotype clusters



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.

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OP0123

SYMPTOMS IN FIRST DEGREE RELATIVES OF PATIENTS WITH RHEUMATOID ARTHRITIS: EVALUATION OF DATA FROM THE SYMPTOMS IN PERSONS AT RISK OF RHEUMATOID ARTHRITISQUESTIONNAIRE

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Background: First degree relatives (FDRs) of people with rheumatoid arthritis (RA) have a four-fold increased risk of developing RA. The Symptoms in Persons At Risk of Rheumatoid Arthritis (SPARRA) questionnaire was developed to document symptoms in persons at risk of RA.

Objectives: To describe i) symptoms in a cohort of FDRs of patients with RA using the SPARRA questionnaire and (ii) the proportion of these symptoms in participants with detectable autoantibodies or elevated CRP.

Methods: The PRe-clinical EValuation of Novel Targets in RA (PREVeNT-RA) study is a cohort of FDRs of patients with RA, who are without inflammatory arthritis and aged ≥30 years at recruitment. Consented participants completed a study questionnaire and provided a blood sample for measurement of Rheumatoid factor (RF), anti-cyclic citrullinated peptide antibodies (anti-CCP) and C-reactive protein (CRP). Those who agreed to future contact were asked to complete the SPARRA questionnaire. This questionnaire asks about a variety of joint symptoms, other symptoms and severity of joint pain in specific parts of the body, allowing identification of symmetrical, small and large joint pain. We identified subjects with moderate/severe symptoms and rheumatoid distribution (symmetrical, small and large joints). We also stratified these groups by 1) seropositivity (RF or anti-CCP positive) and 2) elevated CRP.

Table 1. Participants reporting moderate or severe symptoms by seropositivity status and elevated CRP (N=870)

		Seropositive (RF or anti-CCP positive)			Elevated CRP		
	Overall %	Yes %	No%	Difference in proportion (95% confidence interval)	Yes %	No%	Difference in proportion (95% confidence interval)
Symmetrical joint pain	17.1	27.9	16.6	11.3 (-2.3 to 25.0)	27.0	15.5	11.5 (3.2 to 19.8)
Small joint pain	22.8	34.9	22.1	12.8 (-1.8 to 27.3)	32.0	21.3	10.7 (1.9 to 19.5)
Large joint pain	31.0	32.6	31.0	1.6 (-12.8 to 16.0)	39.3	29.7	9.7 (0.4 to 18.9)

Results: By July 2018, 1866 participants had completed the study questionnaire and provided a blood sample. Of those 870 (47%) returned the SPARRA questionnaire and in this subgroup, 43 (5%) were seropositive and 122 (14%) had elevated CRP. The most frequently reported symptoms were sleep problems (20%), joint pain (18%) and fatigue (17%). The proportion with joint stiffness, symmetrical joint pain or small joint pain was higher in the seropositive and elevated CRP groups. This difference was statistically significant in those with elevated CRP, respective difference in proportions (95% CI) of small and symmetrical joint involvement were 10.7 (1.9 to 19.5) and 11.5 (3.2 to 19.8) (Table 1).

Conclusion: This is the first time the SPARRA questionnaire has been applied in FDRs of patients with RA. Some of the most prevalent symptoms e.g. sleep problems or fatigue, did not identify patterns suggestive of progression to RA. However, the distribution of joint involvement (symmetrical, small joint pain), was in keeping with RA features. This part of the questionnaire may be useful in identifying individuals most likely to develop RA.

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THURSDAY, 13 JUNE 2019

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

OP0124

DO ALL ANTIPHOSPHOLIPID 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.