CAST0623

CHARACTERIZING THE GUT AND PLASMA METABOLOMES IN PATIENTS WITH ANCA-ASSOCIATED VASCULITIS

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Background: Although a link between gut microbiome and autoimmunity has been suggested, there is a gap in the understanding of the gut metabolome in ANCA-associated vasculitis (AAV).

Objectives: To explore the mechanisms by which an altered gut microbiota might predispose to ANCA-associated vasculitis (AAV), a comprehensive metabolic profiling of fecal and plasma bile acids, amino acids, and short chain fatty acids was performed in patients with AAV (granulomatosis with polyangiitis; microscopic polyangiitis; and eosinophilic granulomatosis with polyangiitis) and healthy controls.

Methods: Using cross-sectional and longitudinal designs, the fecal and plasma metabolomes of patients with newly diagnosed AAV (active and in remission) were compared to chronic AAV (active and in remission), and to healthy controls. All samples were analyzed by Liquid Chromatography/Mass Spectrometry for bile acids, aminoacids, and short chain fatty acids.

Results: Fecal microbiome was analyzed on the same fecal samples by Next-generation sequencing the bacterial 16S rRNA gene (V1-V2 region). Association between bacterial taxa and fecal metabolites was studied using logistic regression models, correcting for multiple comparisons.

Conclusion: Active AAV is associated with an altered fecal and plasma metabolome. Plasma taurocholate bile acid, and plasma and fecal amino acids are higher in chronic remission states compared to new diagnosis remission states, suggesting potential anti-inflammatory mechanisms.

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SAT0622B

SERUM URIC ACID LEVELS WERE INDEPENDENTLY ASSOCIATED WITH AORTIC ARCH CALCIFICATION IN MIDDLE-AGED AND ELDERLY CHINESE POPULATION

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Background: Aortic calcification is considered markers of subclinical atherosclerotic disease that are independent predictors of subsequent cardiovascular events. A growing number of studies have shown that serum uric acid is associated with the development of cardiovascular diseases.

Objectives: The main purpose of this study was to investigate the prevalence of aortic calcification and to determine the relationship between the levels of serum uric acid and aorta calcification in the middle-aged and elderly population.

Methods: From Jan 2018 to Dec 2018, totally 6152 consecutive participants aged >50 years old underwent annual health survey were included in this study. Detailed physical examination was performed as well as a thorough review from structured questionnaires, which in baseline demographics and medical history including alcohol consumption, smoking and physical activity status, BMI, blood pressure, blood glucose and serum lipid were all collected and recorded. Aortic calcification was analyzed by chest X-ray. All data were analyzed retrospectively.

Results: The prevalence of aortic arch calcification was 13.9% in these 6152 participants with age >50 years and was equally common in men and women. Aortic arch calcification prevalence was significantly increased in populations with hyperuricemia (defined as serum uric acid 420 umol/L), as compared with populations with normal serum uric acid levels (defined as serum uric acid ≤ 420 umol/L) (83.39% vs. 16.61%, p < 0.001). Participants were divided into three groups according to their uric acid levels. A more prevalent aortic arch calcification was identified in high uric acid level group than those in middle or low uric acid level groups (p < 0.05). On logistic regression analysis, serum uric acid levels were found to be independently associated with aortic arch calcification (OR=1.469, 95%CI: 1.199–1.800, P<0.01) in these participants.

Conclusion: Serum uric acid levels were independently associated with aortic arch calcification in middle-aged and elderly Chinese population. These results may suggest the need for more aggressive actions for urate lowering therapy in middle-aged and elderly hyperuricemia patients, especially in patients coexist with other cardiovascular disease risks.

REFERENCES
effects of these metabolites. Diminished metabolic diversity may be a feature of active AAV and potential biomarker to predict disease activity in AAV.

REFERENCES

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VALIDATION PROCESS OF CASES OF RHEUMATOID ARTHRITIS IN A LARGE PROSPECTIVE COHORT OF FRENCH ADULT WOMEN: THE E3N COHORT

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Background: Rheumatoid arthritis (RA) is a complex multifactorial autoimmune disease in which genetic and environmental factors interact in the pathogenesis of the disease to trigger auto-immunity. Except for tobacco smoking, the role of environmental factors has been suggested yet poorly investigated, and results were rarely reproducible. More observational studies are requested to address the question. Cohort studies offer the advantage over case-control studies of having a prospective collection of environmental factors before disease onset, thus avoiding recall bias. However, collected information about disease phenotypes is usually limited, and a rigorous process of case validation is needed.

Objectives: To detect RA cases in a large prospective cohort of healthy French adult women and to assess the performance of the validation methods.

Methods: The French E3N cohort included 98,995 healthy women prospectively followed since 1990. Self-administered questionnaires were sent every 2-3 years to collect medical events, and general, lifestyle, and environmental characteristics. Potential cases of inflammatory rheumatic diseases (IRD), including RA cases, were identified through self-reports in three consecutive questionnaires. Self-reported RA cases were validated with two methods including sending of a specific validation questionnaire and the use of the reimbursement database. The sensitivities and specificities of each method were calculated using as a reference the analysis of available medical records reviewed by a panel of expert rheumatologists.

Results: Among the 3,192 identified potential IRD cases, 2,664 RA cases were validated, including 698 incident cases and 266 prevalent cases. Of them, 314 (32.6%) were seropositive, 23 (2.4%) seronegative and 627 (65.0%) had unknown antibody status. Mean age at diagnosis was 57.4 ± 13.9 years (40.9 ± 10.4 years for prevalent cases, and 63.8 ± 9.0 for incident cases). Sensitivities and specificities of the validation methods were 92.2 and 83.7% for the specific validation questionnaire and 96.8 and 97.0% for the reimbursement database.

Conclusion: This study enabled us to detect a large number of RA cases in a large general population prospective cohort of women with acceptable sensitivity and specificity. This will allow investigating a large number of potential endogenous and exogenous risk factors of RA in women.

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TREATMENT RESPONSE AND DRUG RETENTION RATES IN 23,856 BIOLOGIC-NAÏVE PATIENTS WITH AXIAL SPONDYLOARTHRITIS INITIATING TNFI TREATMENT – ROUTINE CARE DATA FROM 12 REGISTRIES IN THE EUROSPA COLLABORATION

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Background: The efficacy of Tumour Necrosis Factor Inhibitor (TNFi) in patients with axial spondyloarthropathy (axSpA) has been investigated in randomized controlled trials (RCTs) with strict inclusion and exclusion criteria. Patients treated in routine care are more heterogeneous and only >20-30% of patients receiving TNFi in routine care would have been eligible to be enrolled in the RCTs. This emphasizes the need for real-world observational data as a valuable supplement to RCTs. Studying large patient groups from several European countries would increase the external validity of the results. Particularly, large data sets from patients with non-radiographic axSpA (nr-axSpA) are lacking.

Objectives: To investigate TNFi retention rates at 12 months (primary objective), 6 and 24 months, and response rates at the same time-points in biologic-naïve patients with axSpA from the EuroSpA Research Collaboration. Furthermore, to investigate if findings vary between patients with nr-axSpA and ankylosing spondylitis (AS). Methods: Data from 12 European quality registries in rheumatology, prospectively collected in routine care, were anonymized and uploaded through the secure Virtual Private Network pipelines to the EuroSpA server. Baseline characteristics were investigated with non-parametric descriptive statistics. TNFi retention rates (Kaplan-Meier statistics), and Ankylosing Spondylitis Disease Activity Score (ASDAS) Inactive disease (>1.3) and Bath Ankylosing Spondylitis Disease Activity Index (BASDAI) ≤4 were assessed, including LUNDEXUS adjustment7. For patients initiating 1st TNFi after January 1st 2009, the following sub-cohorts were also...