Abstract AB0043 – Figure 1

Conclusions: a certain heterogeneity within the IFN signature can be recognised in RA, depending on the clinical stage. The structure of the IFN signature may be a potential explanation for the controversy in this field and may represent a limitation for its use as a clinical biomarker.

Disclosure of Interest: None declared


AB0043

THE ELASTICITY PROPERTIES OF PROBIOTIC BACTERIA WALL ASSOCIATED WITH BENEFICIAL MODULATORY ACTIVITY ON INNATE IMMUNITY OF THE HOST


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Background: Probiotics have tremendous potential to develop healthy diets and integrated approach for immunity-related diseases treatment and prevention,[1,2] are effective actors in distant sites[3] with strong potential for applications in rheumatology. The cell wall of probiotic bacteria plays an essential role in many aspects of modulating beneficial immune response,[4] its elasticity properties associated with probiotic beneficial effects[5] and can warrant to stratify strains on their modulatory activity on innate immunity to justify individualised and personalised approach for nutrition and prevention.

Objectives: The aim was to study the effect of lactic acid bacteria (LAB) and bifidobacteria strains on phagocytic system cells functional activity and immunoregulatory cytokines synthesis in vitro in regards to the bacteria surface properties as cell walls elasticity using atomic force microscopy (AFM).

Methods: We conducted experimental studies on BALB/c line mice 18–20 g weight using lyophilized strains of LAB – Lactobacillus acidophilus IMV B-7279, L. casei IMV B-7280, L. delbrueckii subsp. bulgaricus IMV B-7281 and bifidobacteria – Bifidobacterium animalis VKL, B. animalis VKB. We cultivated the macrophages received from the peripheral cavity of mice by common method individually with the strains of LAB and bifidobacteria. We estimated the impact of LAB and bifidobacteria strains on the functional activity of peritoneal cavity macrophages using the conventional methods of study oxygen-dependent bactericidal activity, nitric oxide production, their effect on the immunoregulatory cytokines. We used AFM scanning to estimate bacteria cell walls elasticity.

Results: All strains demonstrated a stimulating effect on the functional activity of macrophages and ability to produce NO/NO2 in vitro. Lactobacilli strains increased the production of IL-12 and IFN-γ in vitro. The AFM demonstrated different degree of the cell walls elasticity in various strains of LAB and bifidobacteria. Among lactobacilli the most elastic cell wall was found in L. delbrueckii subsp. bulgaricus IMV B-7281 and among bifidobacteria – in B. animalis VKL, which induced the considerable activation of the phagocytes. Probiotic strains survival in...
the macrophages depended on the elasticity of bacterial cell walls and on the time of their joint cultivation.

Conclusions: LAB and bifidobacteria strains stimulate immunomodulatory cytokines and active oxygen and nitrogen oxides compounds production in macrophages. Strains with a more elastic cell wall according to AFM data demonstrated higher resistance to intracellular digestion in macrophages and higher level of their activation. AFM might be considered as a fast and accurate method to assess parameters of probiotic strains cell wall to predict their beneficial immunomodulatory properties. Further large-scale preclinical research needed for future application in rheumatic diseases treatment and prevention.

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AB0044

HYPER IG-D SYNDROME TREATMENT WITH HYDROXYCHLOROQUINE

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Background: Hyper IgD syndrome is a minor form of mevalonate kinase deficiency caused by a its gene mutation and considered an auto-inflammatory disease inherited in an autosomal recessive manner, characterised by periodic episodes of fever, arthralgia, lymphadenopathy, skin rash, headaches, and abdominal pain. These attacks can occur spontaneously or be triggered by infection. The patient was symptomless on a lower dose 200 mg daily with completely normalised inflammatory markers.

Methods: We report a case of 36-year-old female, presented with a first manifestation at age 35 with fever and extended cellulitis of the left arm treated successfully with antibiotic, rapidly followed with urticarial rash involving the upper side of the body, face and upper limbs migratory type lasting less than 24 hours suspecting allergic reaction. She was under supportive treatment (anti-histaminic and low-dose steroids) that improved her condition temporarily. She developed multiple recurrent similar episodes for 7 months with high grade fever up to 39°C, inflammatory polyarthralgia affecting small joints, recurrent left elbow erythematous plaque with few subcutaneous nodules, considered as pansiculilits type lesion (Picture-1) along with urticarial rash. Series of tests were undertaken along with skin biopsy.

Results: Biopsy of the lesion showed intense deep dermal neutrophil infiltrates. CRP fluctuating between 50 to 95 mg/L during the episodes. Neutropenia (1.7 to 1.9). Normal findings for ANA and SSA antibodies, ACE, Lysozyme enzyme, C3 and C4. Other infectious work-up was negative including Quantiferon God test. Protein electrophoresis found hypergammaglobulinemia. The Ig-D level was 263 mg/L and on another occasion 313 mg/L (normal <153 mg/L), the samples were taken during flare up and after recovery. The patient was treated by Colchicine for more than 3 months without beneficial effect. A triad with hydroxychloroquine 400 mg daily brought a progressive improvement with lesser episodes at 3rd month and no recurrences at 6 months. After one year of therapy the patient was symptomless on a lower dose 200 mg daily with completely normalised inflammatory markers.

Conclusions: We conclude that Hyper Ig-D syndrome can be treated by hydroxychloroquine. This is the first report in the literature conducting this treatment option that can bring attention for further case by case trials.

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AB0045

ACTIVATED RNASE L AS A NOVEL DISEASE ACTIVITY BIOMarker IN PSORiATiC ARTHRiThiS

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Background: Almost 60% of psoriasis (PsO) patients with psoriatic arthritis (PsA) are estimated to be untreated, undertreated or/and undiagnosed. Delayed diagnosis leads to permanent joint damage causing major functional decline and diminished quality of life. However, in the absence of diagnostic biomarkers, the diagnosis of psoriatic arthritis is clinical and hence difficult to establish from non-rheumatologists. Recent studies have demonstrated the upregulation of type I interferon (IFN)–inducible genes in paired peripheral blood cells (PBC) and synovial biopsies of patients with PsA. Oligoadenylate synthetase (OAS) are type I IFN-stimulated family of proteins that are activators of the latent Ribonuclease L (RNase L) pathways. The OAS-RNase L system is a potent host antiviral IFN-responsive system that is completely inactive in normal conditions, but once activated mediates a broad array of pro-inflammatory cellular processes.

Abstract AB0044 – Figure 1

Figure 1

REFERENCES:


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