AB0308

COGNITIVE IMPAIRMENT IN SYSTEMIC LUPUS ERYTHEMATOSUS AND ANTIPHOSPHOLIPID SYNDROME PATIENTS

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Background: Cognitive impairment (CI) in systemic lupus erythematosus (SLE) and antiphospholipid syndrome (APS) patients have been poorly described and recognized.

Objectives: to describe the rates and spectrum of CI in primary (PAPS) and secondary to systemic lupus erythematosus (SLE) (SAPS) APS patients

Methods: 113 patients (70 with APS (37 – PAPS, 33 – SAPS) and 43 – SLE without APS), 89 (78,8%) – women, were consecutively enrolled in the study. The mean (M±SD) age was 37,9±11,9 years. SLE activity was measured by SLEDAI scale. Mental disorders (MD) were diagnosed by psychiatrist in accordance with ICI-10 in semi-structured interview. CI were diagnosed with psychology and neuropsychology methods

Results: CI of varying severity were found in 105 (92,9%) patients: 62,9% - mild, 23,8% - moderate and 13,3% - severe. Severe and moderate CI were more associated with APS (48,6% in PAPS and 39,5% in SAPS vs 18,6% in SLE, p=0,004 and p=0,04, accordingly). CI were predominantly organic origin in all patients, but vascular dementia was detected only among patients with APS (10,8% of PAPS and 3,03% of SAPS patients). There was no association of CI with clinical manifestations and SLE activity. In patients with PAPS CI was associated with stroke, livedo reticularis and lupus anticoagulant positivity. In 84 patients (74,3%) CI were also specifically bounded to MD. Current MD were detected in 100 (88,5%) patients: schizotypal disorder was found in 10 (8,85%) patients and was associated with PAPS (13,5% vs 9,09% in SAPS and 4,65% in SLE); anxiety-depressive spectrum disorders (ADDs) - in 95 (84,1%) (chronic and recurrent depression prevailed 37 (32,7%) and 42 (37,2%) resp.); the structure of MDs in accordance with ICI-10 differed slightly between groups, but no statistically significant differences were obtained.

Conclusion: cognitive impairment, mainly of an organic type, are characteristic of most patients with SLE and APS. The significant associations of cognitive impairment with clinical manifestations and activity of SLE were not identified, but patients with cognitive impairments were more likely to have anxiety and depressive disorders, strokes, livedo reticularis and lupus anticoagulant positivity

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AB0309

SAFETY OF 23-VALENT POLYSACCHARIDE PNEUMOCOCCAL VACCINE IN PATIENTS WITH SYSTEMIC LUPUS ERYTHEMATOSUS

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Background: Vaccination of patients with autoimmune diseases with pneumococcal vaccines is necessary to prevent severe respiratory infections in this group of patients. The main issue of immunization of patients with systemic lupus erythematosus (SLE) remains the issue of safety.

Objectives: The aim of the study was to study the safety of the 23-valent polysaccharide pneumococcal vaccine (PPV-23) in patients with SLE.

Methods: The study included 73 patients with a reliable diagnosis of SLE, of which women - 64, men - 9, aged 19 - 68 years. 69 patients received glucocorticoids (GC) 5-30 mg/day, 55- hydroxychloroquine (GCH), 37-cytostatics (CS), 27 – biologics (14 – rituximab (RTM), 11 – belimumab (BLM), 2-BLM and RTM). 1 dose (0.5 ml) of PPV23 was administered subcutaneously. 60 patients were examined within 1 year, 13 - within 2-3 months.

Results: Vaccination tolerance was assessed in 73 patients: in 33 (45.2%) - vaccine reactions were absent, in 36 (49.3%) - local reactions of mild and moderate severity were noted (pain, swelling, skin hyperemia at the injection site of the vaccine), lasting from 2 to 7 days, in 1 (1.4%) - general weakness within 1 month, in 2 (2.7%) - mild diarrhea within 1 day. Vaccinal reactions were typical

and completely reversible, did not require additional appointments. One patient (1.4%) developed a hyperergic reaction of the Artyus phenomenon type, which was arrested within 7 days by the use of antihistamines and topical GCs. None of the 60 patients, whose follow-up period was 1 year, had no exacerbations of the disease directly related to vaccination (i.e., in the next 2-3 months). Vaccination was carried out both at a low degree of activity (n = 33 (55%)) and remission (n = 6 (10%)), and at an average (n = 12 (20%)) and high (n = 9 (15%)) the degree of SLE activity. The dynamics of the SLE activity index SLEDAI-2k (Me) during the year was as follows: initially - 4 (2; 6), after 2-3 months - 2 (2; 4), after 12 months - 2 (2; 4). During the year, 7 out of 60 patients had a moderate exacerbation of the disease, which was not related to the vaccination in terms of timing: after 3.5-5 months (3), 12 months (4). An exacerbation occurred in 4 - with a decrease in the HA dose, in 1 - after psychological stress, in 1 - against the background of persistently high immunological activity and insufficient therapy, in 1 - without an increase in immunological activity. In 4 out of 7, exacerbation was manifested by skin rashes and articular syndrome, in 1 - by the development of panniculitis, in 2 - by leukopenia. All these symptoms were noted earlier in the period of exacerbation. In all, the exacerbation was quickly stopped by a moderate increase in the HA dose. In 60 patients, the dynamics of immunological markers of SLE was analyzed during the year after vaccination. There was no evidence of a significant increase in the immunological activity of SLE after vaccination with PPV-23. After vaccination, no new autoimmune phenomena have been identified. In the first 3 months. after vaccination, in isolated cases, there was a transient increase / decrease in SLE markers (a-DNA, ANF, C3, C4) with a subsequent return to the initial values, without symptoms of exacerbation of the disease.

Conclusion: 1. During the year of observation, no exacerbations were observed that were reliably associated with vaccination. 2. Vaccination with PPV-23 is safe for SLE patients during periods of low and moderate activity. If necessary, vaccination is possible at high activity without the development of adverse events. 3. The multidirectional dynamics of the main markers of SLE observed during the year reflects the instability of immunological parameters characteristic of SLE.

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AB0310

TOLERABILITY AND SAFETY OF 23-VALENT POLYSACCHARIDE PNEUMOCOCCAL VACCINE IN PATIENTS WITH ANTIPHOSPHOLIPID SYNDROME, PRELIMINARY RESULTS

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Background: Antiphospholipid syndrome (APS) is an autoimmune disease often associated with severe, life-threatening vascular complications. The majority of patients (and in case of secondary APS, in 100% of cases) receive immunosuppressive therapy. Immunization with pneumococcal vaccines in patients with both primary APS (PAPS) and APS+SLE or secondary (sAPS) is necessary to prevent severe respiratory infections in these patients.

Objectives: Purpose of the study - to study the tolerance and safety of 23-valent polysaccharide pneumococcal vaccine (PPV-23) in patients with PAPS and SAPS.

Methods: At this stage, the study included 28 patients with APS, of which 10 with PAPS, 18 with SAPS preceding against the background of systemic lupus erythematosus (SLE), of which 23 women (82%), 5 men (18%). The average age (Me) of patients was 43 (35.5; 53.0) g. 20 patients received glucocorticoids (GC) 5-30 mg/day equivalent to prednisone, 17- hydroxychloroquine, 6- cytostatics (3-cyclophosphamide, 2-azathioprine, 1- mycophenolate mofetil), 8- biologics: 5-rituximab (RTM), 3-belimumab (BLM); 20-received anticoagulants (direct-10, indirect-10).

1 dose (0.5 ml) of PPV-23 was administered subcutaneously. The follow-up time was 1 year in 23 patients and 5-5.5 months in 5-5.5 months. During the visits, standard clinical and laboratory tests were performed, immunological blood test and the level of antibodies to S.pneumoniae

Results: Vaccination was well tolerated in all patients. In 29% of cases, vaccine reactions of mild severity were observed: in 7 (25%) - a local reaction (pain in the arm for 1-3 days-at 7, redness up to 2 cm at the injection site-at 1), in 1 (3,6%), the patient experienced general weakness (moderately pronounced) for 1 month. Vaccinal reactions were completely reversible and did not require additional prescriptions. Post-vaccination complications develop, as a rule, in the first 1-2

months after vaccination. During the observation period, none of the patients had an exacerbation of the disease, reliably associated with the vaccination. There was no recurrence of thrombosis, both in patients receiving anticoagulant therapy and without it. No new autoimmune phenomena, both clinical and laboratory, were identified. The dynamics of the production of anti-streptococcal antibodies during the year was followed in 16 patients. One year after vaccination, 31% of patients showed a significant (more than 2-fold compared to the initial) increase in the concentration of antibodies to polysaccharides of the cell wall of *S. pneumoniae* ("responders"), 69% of patients were "non-responders" to the vaccine. At the same time, all 5 patients with PAPS were "non-responders," and 45.5% "respondents" with sAPS.

Conclusion: Preliminary results show that patients with APS tolerate PPV-23 vaccination well. In the next post-vaccination period, exacerbations of the disease, thrombosis were not recorded. Attention is drawn to the large number of "non-responders" in PAPS, however, to obtain statistically reliable results, it is necessary to continue the study and recruit more patients.

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AB0311

INCREASED LEVELS OF SERUM WISTERIA FLORIBUNDA AGGLUTININ POSITIVE MAC-2 BINDING PROTEIN IN RHEUMATIC DISEASES INCLUDING SLE

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Background: Mac-2 binding protein is a cell-adhesive glycoprotein of the extracellular matrix secreted as a ligand of galectin-3 (Mac-2). Recently, a Wisteria floribunda agglutinin positive-M2BP (M2BP) assay developed using a lectin-antibody sandwich immunoassay has shown promise as a new fibrotic marker in liver fibrosis and interstitial lung disease (ILD) to detect unique fibrosis-related glycoalteration.

Objectives: The aim of this study is to evaluate the utility of serum Mac-2 binding protein glycosylation isomer (M2BPGi) levels in patients with rheumatic diseases (RD).

Methods: We retrospectively measured serum M2BPGi levels in 68 patients with RD and 16 healthy controls (HC). There were no patients of cirrhosis and active hepatitis. Serum levels of M2BPGi were measured using HISCL M2BP glycosylation isomer Assay Kit. We examined the relationship between serum M2BPGi levels and clinical parameters in patients with RD.

Results: In patients with RD, the median age was 62.0 years and 79.4% of them were female.

Serum M2BPGi levels were significantly higher in patients with RD than in HC (median 0.98 cutoff index [COI], 0.32 COI, respectively; $P < 0.00001$). Patients with SLE tended to have higher serum M2BPGi levels than other rheumatic diseases.

In patients with RD, a significant correlation was not found between serum M2BP levels and inflammation markers such as CRP or ferritin. However, serum M2BPGi levels were significantly correlated with B cell activation markers such as immunoglobulin free light chain and IgG ($r = 0.588, 0.504$) and T cell activation marker such as sIL-2R ($r = 0.408$).

Conclusion: Most of the rheumatic diseases in this study were considered to be type I interferonopathy diseases such as rheumatoid arthritis, Sjogren's syndrome, inflammatory myositis, scleroderma and SLE.

Serum M2BPGi was reported to have a significant correlation with SLE disease activity [SS Ahn et al. Lupus. 2018; 27: 771], and also to have a significant correlation with Gakectin-9, a novel biomarker for IFN signature [Lucas L van den Hoogen et al. Ann Rheum Dis. 2018; 77: 1810].

So, it was suggested that serum M2BPGi may be a novel biomarker that indirectly indicates how much IFN is activated in rheumatic diseases.

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AB0312

INCREASED PREVALENCE OF OBSTRUCTIVE SLEEP APNEA IN INDIVIDUALS WITH SYSTEMIC LUPUS ERYTHEMATOSUS

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Background: Sleep disturbances are common in individuals with rheumatological diseases in general and systemic lupus erythematosus (SLE) in particular¹. Studies suggest that obstructive sleep apnea (OSA) might correlate with SLE disease activity and the presence of additional symptoms such as pain, fatigue, affective symptoms and steroid use². Sleep disturbances symptomatology such as fatigue and increased pain overlap with constitutional inflammatory symptoms of SLE and may mimic or mask disease related relapse^{3,4}. Therein lies the importance of diagnosing and treating such disorders in SLE.

Objectives: To determine whether patients with SLE have increased prevalence of OSA as assessed by the apnea hypopnea index (AHI) and to explore possible contributors to OSA including SLE disease activity and accrued damage, medications, secondary fibromyalgia and depression.

Methods: 42 consecutive patients with SLE (38 women, 4 men) and 20 healthy, sex, body mass index (BMI) and age matched controls (15 women, 5 men) were consecutively recruited and underwent an ambulatory sleep study using the WatchPAT device. All participants completed questionnaires including Pittsburgh Sleep Quality Index (PSQI), Epworth Sleepiness Scale (ESS), Functional Assessment of Chronic Illness Therapy (FACIT), Widespread Pain Index (WPI), Symptoms Severity Scale (SSS) and Beck Depression Inventory. SLE disease activity and damage were assessed using the Systemic Lupus Erythematosus Disease Activity Index (SLEDAI) and Systemic Lupus International Collaborating Clinics (SLICC) damage index.

Results: The mean AHI was 9.19 ± 6.79 in the SLE group and 3.95 ± 3.47 in the control group ($p=0.004$). Moderate-severe OSA ($AHI \geq 15$) was significantly more common in patients with SLE (23.6% vs. 0%, $p=0.04$). Patients with SLE had lower sleep efficiency (83.38 ± 6.15 vs. 87.22 ± 4.24 , $p=0.03$), increased sleep arousals (7.72 ± 5.66 vs. 5.13 ± 2.29 , $p=0.01$), higher PSQI and FACIT scores SLE (8.14 ± 3.47 vs. 5.10 ± 2.64 , $p=0.001$, 16.89 ± 11.19 vs. 7.29 ± 5.93 , $p=0.0008$ respectively) and had more fibromyalgia as assessed by WPI and SSS

SLE, Systemic Lupus Erythematosus; RDI, Respiratory Disturbance Index; AHI, Apnea Hypopnea Index; ODI, Oxygen Desaturation Index