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074 Local Immune Responses in Placentas of Women with COVID-19 SARS Complicated Pregnancy Increase with Each Trimester



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RATIONALE: Local immune responses may occur in placentas of women with COVID-19 SARS. This study assesses the features of local immune responses in placentas of women with COVID-19.

METHODS: The study materials were the placentas of women who had a normal physiological course of pregnancy (Group 1, n=15) and women who had a pregnancy complicated by COVID-19 in the first trimester (Group 2, n=12), in the second trimester (group 3, n=11), or in the third trimester (Group 4, n=14). In Groups 1-4, childbirth occurred at 37-40 gestation weeks. Immunohistochemical assessment employed monoclonal antibodies to CD3, CD20, CD68. The absolute number (AN) of CD3-, CD20-, CD68-cells were counted.

RESULTS: In Groups 1-4, CD3-, CD20-, CD68-cells were detected in decidua, villi and intervillous space, chorionic and amniotic membranes. The AN of CD3-, CD20-, CD68-cells were increased ($p < 0.05$) in Group 2 (72.8 ± 1.9), (3.6 ± 0.4), (92.1 ± 1.6)), in Group 3 (99.5 ± 2.1), (6.9 ± 1.2), (136.1 ± 2.6)), and in Group 4 (138.9 ± 2.9), (19.6 ± 1.9), (165.4 ± 2.5)) compared with Group 1 (30.9 ± 1.5), (0.2 ± 0.01), (28.4 ± 1.7)). In Groups 2 to 4, these cells consistently increased ($p < 0.05$) going from first to second to third trimester of pregnancy.

CONCLUSIONS: In placentas of women whose pregnancy was complicated by COVID-19 disturbances of local immune responses occurred characterized by an increase number of T-lymphocytes, B-lymphocytes and macrophages increasing in magnitude with each trimester of pregnancy.

075 The Impact of Post COVID Rehabilitation on the Level of Systemic Inflammation in Patients with Post COVID Syndrome



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RATIONALE: Low-grade inflammation is a risk factor for adverse cardiovascular events including death from cardiovascular disease. Cardiovascular events are one of the most common manifestations of post covid syndrome, impacting the mortality in the post covid period.

METHODS: 260 post covid patients age 48-66 years were examined. All patients underwent rehabilitation in a Crimean sanatorium, that included climatologic therapy on the southern coast of Crimea; dietary therapy; pharmacologic therapy, and if necessary, breathing exercises using a variety of methods of respiratory therapy. The patients were examined for C-reactive protein (CRP) level in peripheral blood before and after the sanatorium rehabilitation.

RESULTS: The level of CRP of the patients who underwent rehabilitation did not differ significantly ($p > 0.05$) from the initial values obtained on the day of admission to the rehabilitation center. At admission and upon discharge the CRP values corresponded to the lower limit of the levels characteristic of low-grade inflammation ranging from 3 mg/l to 10 mg/l).

CONCLUSIONS: The currently available methods of physical rehabilitation of post covid patients as implemented in a Crimean sanatorium did not provide a reduction of the level of systemic inflammation as assessed by CRP determination. New less traditional approaches may be needed to reduce inflammation in post covid syndrome patients who are at risk for cardiovascular adverse consequences.

076 Manifestations of Covid-19-associated ANCA-vasculitis



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RATIONALE: Antineutrophil cytoplasmic antibody (ANCA)-associated vasculitis (AAV) are systemic autoimmune diseases that may lead to multi-organ failure due to the destruction of small- and medium-sized blood vessels. Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) may exacerbate autoimmune diseases and induced vasculitis.

METHODS: 9 patients median age 42 years (IQR, 31 to 50) with AAV after SARS-CoV-2 were assessed for signs of autoimmune disease and serologic inflammation.

RESULTS: There was no significant differences in median age between male and female groups. Symptoms and comorbidities were comparable in men and women. All patients were hospitalized with fever, cough and vasculitis symptoms. Fever (88.9%), cough (66.7%), skin and oral lesions (88.9%), polyarthralgia (55.6%) and myalgia (44.4%) were the most common symptoms. Five patients (55.6%) experienced asthenia. Morbilliform eruptions (44.4%), papules and peripheral erythema (55.6%), and pernio-like acral lesions (33.3%) were distributed symmetrically on all extremities and lower trunk. Microvascular thrombosis was seen in skin biopsies of two patients with vaso-occlusive cutaneous lesions. Serology showed positive antinuclear antibodies (ANA) and antineutrophil cytoplasmic antibodies-myeloperoxidase (ANCA-MPO). The anti-myeloperoxidase antibody levels were 42.6 ± 7.6 kU/l ($N < 0.3$). Eight patients had C-reactive protein levels above the normal range (8.8 mg/L to 156.9 mg/L), elevated liver enzymes and D-dimer. The appearance was consistent with SARS-CoV-2-associated vasculitis, erythema multiforme, and viral exanthem. Organ function improved after methylprednisolone and IVIG treatment.

CONCLUSIONS: SARS-CoV-2 associated AAV is a rare presentation requiring specific diagnostic assessment and therapy to suppress the severe underlying inflammation associated with ANCA-associated vasculitis.