Methods: We reviewed the medical charts of the pediatric SLE patient in National Taiwan University Hospital from August 2015 to September 2019, and 50 SLE patients presented 185 episodes of suspicious activity or infection and received CRP ESR, and Procalcitonin measurement were included. Time-matched other laboratory parameters and clinical assessments were also collected. Episodes were divided into 4 groups: infected-active, infected-inactive, noninfected-active, and noninfected-inactive. Association of parameters with outcomes were predicted by generalized estimating equation. The receiver operating curve and the area under the curve were used to evaluate the diagnostic performance. We also used multinomial logistic regression model for nominal outcome, by setting noninfected-inactive group as the reference category.

Results: There were 7 males (14%) and 43 females (86%), with the mean ages 13.9 ± 4.4 years old. Most of the patients had renal (72%) or mucocutaneous (72%) involvement. The most common infection site was respiratory system (56%). Multivariable GEE analysis showed Damage index (DI), SLEDAI-2k, neutrophil-to-lymphocyte ratio (NLR), hemoglobin, platelet, RDW-to-platelet ratio (RPR), and C3 are independent parameters for predicting SLE activity flare. Combination of these seven parameters resulted in a model with calculated AUC of 0.864 and with sensitivity of 82.2 % and specificity of 90.9%. Multivariable GEE analysis showed DI, fever, CRP, Procalcitonin, lymphocyte percentage, NLR, hemoglobin, and renal score in SLEDAI-2k are independent parameters for predicting acute infection. These eight parameters resulted in a model with calculated AUC of 0.7688 and with sensitivity of 63.5% and specificity of 89.2%. We selected a total of 10 variables (DI, SLEDAI-2k, Fever, Procalcitonin, lymphocyte percentage, NLR, hemoglobin, and renal score in SLEDAI-2k) as independent parameters for predicting acute infection. These 10 variables resulted in a model with calculated AUC of 0.7688 and with sensitivity of 63.5% and specificity of 89.2%. We selected a total of 10 variables (DI, SLEDAI-2k, Fever, Procalcitonin, lymphocyte percentage, NLR, hemoglobin, and renal score in SLEDAI-2k) as independent parameters for predicting acute infection. These 10 variables resulted in a model with calculated AUC of 0.7688 and with sensitivity of 63.5% and specificity of 89.2%. We selected a total of 10 variables (DI, SLEDAI-2k, Fever, Procalcitonin, lymphocyte percentage, NLR, hemoglobin, and renal score in SLEDAI-2k) as independent parameters for predicting acute infection. These 10 variables resulted in a model with calculated AUC of 0.7688 and with sensitivity of 63.5% and specificity of 89.2%. We selected a total of 10 variables (DI, SLEDAI-2k, Fever, Procalcitonin, lymphocyte percentage, NLR, hemoglobin, and renal score in SLEDAI-2k) as independent parameters for predicting acute infection. These 10 variables resulted in a model with calculated AUC of 0.7688 and with sensitivity of 63.5% and specificity of 89.2%. We selected a total of 10 variables (DI, SLEDAI-2k, Fever, Procalcitonin, lymphocyte percentage, NLR, hemoglobin, and renal score in SLEDAI-2k) as independent parameters for predicting acute infection. These 10 variables resulted in a model with calculated AUC of 0.7688 and with sensitivity of 63.5% and specificity of 89.2%. We selected a total of 10 variables (DI, SLEDAI-2k, Fever, Procalcitonin, lymphocyte percentage, NLR, hemoglobin, and renal score in SLEDAI-2k) as independent parameters for predicting acute infection. These 10 variables resulted in a model with calculated AUC of 0.7688 and with sensitivity of 63.5% and specificity of 89.2%. We selected a total of 10 variables (DI, SLEDAI-2k, Fever, Procalcitonin, lymphocyte percentage, NLR, hemoglobin, and renal score in SLEDAI-2k) as independent parameters for predicting acute infection. These 10 variables resulted in a model with calculated AUC of 0.7688 and with sensitivity of 63.5% and specificity of 89.2%. We selected a total of 10 variables (DI, SLEDAI-2k, Fever, Procalcitonin, lymphocyte percentage, NLR, hemoglobin, and renal score in SLEDAI-2k) as independent parameters for predicting acute infection. These 10 variables resulted in a model with calculated AUC of 0.7688 and with sensitivity of 63.5% and specificity of 89.2%.

Conclusion: The proposed predictive calculator could be a useful tool for differentiation between activity flares and acute infections in pediatric SLE. Obtaining and combination of several parameters is effective and helpful to make appropriate judgement and treatment decisions for SLE patients.

References:

Disclosure of Interests: None declared

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ADVERSE FACTORS OF COMORBID DISEASES DEVELOPMENT AT DIFFERENT VARIANTS OF JUVENILE IDIOPATHIC ARTHRITIS (JIA)

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Background: It is known that rheumatic diseases are the pathogenetic basis for the formation of many comorbid conditions, the most important of that are cardiocascular pathology, atherosclerosis, osteoporosis, chronic kidney disease and amyloidosis, chronic obstructive pulmonary disease. The start of the disease at an early age, the long-term duration of JIA, the use of basic immunosuppressive therapy lead to the possibility of the onset of the first signs of comorbidity conditions in childhood.

Objectives: To study risk factors for the formation of damage of internal organs and systems in children with non-systemic JIA.

Methods: The case histories of 121 patients aged 7-18 years (mean age 11.0 ± 0.3 years) with polyarticular (67.7%), oligoarticular (14.8%) and uveitis-associated (17.35%) JIA were studied, mainly of females (73.5%). The age of the start of the disease was 5.9 ± 0.4 years, the duration of JIA at the time of analysis reached 67.1 ± 4.3 months. All children received basic methotrexate therapy (plus folic acid), short courses of NSAIDs. There are studied changes in the cardiovascular system (ECG, ultrasound, 6-minute walk test),
lungs (spirometry), kidneys (concentration function, glomerular filtration rate, daily microalbuminuria), lipid spectrum and blood coagulation. Deviations from standard age-gender normal values were taken into account. It was used statistical methods for identifying relationships (stepwise multiple regression). As the dependent value the number of detected changes in the state of internal organs and systems is taken. The independent variables included standard clinical and laboratory parameters, the age of the onset of JIA, the total duration of the disease, the characteristic of the articular syndrome, activity indicators (C-reactive protein, RF and ANA titters, JADAS27), as well as the term for the appointment of basic therapy relative to the debut of the disease, the nature of the dosage methotrexate (mg / m2 / week), the duration of its use at the time of examination.

Results: Based on the analysis and the obtained regression models for the formation of extra-articular lesions in children with various JIA options, it was found that the leading factors in the formation of comorbidity are the duration of the disease (p = 0.01), VAS results (including the child, parents, and patient) (p = 0.01) and methotrexate dose (p = 0.01).

In the polyarticular variant, the body mass index (p = 0.02), erythrocyte content (p = 0.007) were significant for the formation of comorbid states and should be distinguished. The overall duration of the disease (p = 0.02), the low age of initiation of therapy (p = 0.05), VAS of child (p = 0.003), CRP (p = 0.007), dose of methotrexate (p = 0.001) had the greatest significance level among the clinical and laboratory indicators included in the regression model of the formation of comorbidity with the oligoarticular variant. A features of the prognostic model for the formation of organ lesions and metabolic disorders in uveitis-associated arthritis were GCS therapy presence (p <0.001), patient age (p <0.001), JADAS27 (p <0.001) and methotrexate dose (p <0.001).

Conclusion: Thus, in children with JIA, the formation of comorbidity pathology is associated with a lower age of JIA debut in oligoarthritis and uveitis-associated arthritis, low body weight in poly- and oligoarticular JIA variants, an increase in the duration of the disease in the polyarticular variant, and the level of activity of the process, respectively. JADAS 27(p <0.01) and VAS. Prognostically unfavorable for the formation of pathological changes in the internal organs and homeostasis are anemia, high white blood cell count and ESR level.

Disclosure of Interests: None declared

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Other orphan diseases

FRIO473 ASSESSMENT OF FEMORAL VEIN WALL THICKNESS WITH DOPPLER US AS A DIAGNOSTIC TOOL FOR BEHÇET’S DISEASE

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Background: Diagnosing Behcet’s disease(BD) is a challenge, especially in countries with a low prevalence. International Study Group Criteria, accepted as diagnostic, has low sensitivity, especially in early cases when major organ involvement such as uveitis or deep vein thrombosis(DVT) presents alone. We recently published a controlled study of assessing venous wall thickness(VWT) as a surrogate marker of venous disease in BD with ultrasound(US) and observed a very sensitive and specific VWT in male BD patients. The common femoral vein(CVF) thickness measurement, as the primary site of US with the cut-off values > 0.48-0.49 mm, had a high area under the receiver operating characteristic curve(>0.8) with sensitivity and specificity of around 80%(1).

Objectives: In this study, we aimed to investigate the diagnostic performance of CVF thickness measurement in BD including females comparing with multiple control disease groups.

Methods: One hundred-and ten patients with BD, 47 healthy controls(HC), 21 patients with systemic vasculitides, 28 patients with venous insufficiency,29 patients with antiphospholipid syndrome (APS) having DVT history, were included the study. Bilateral CVF thickness was measured with US by an experienced radiologist blinded to cases(Figure 1).

Figure 1. Measurement of common femoral vein thickness

References: