parenchyma. We classify them as primary or secondary, depending on whether there is a pulmonary or systemic disorder. The most common causes of primary abscess are Streptococcus pneumoniae, Staphylococcus aureus and oral bacteria, while the cause of secondary abscess is Pseudomonas aeruginosa, but fungal infections can also be found. Symptoms appear gradually, over several weeks, such as chest pain, cough, fatigue, chills, decreased appetite with weight loss, night sweats, purulent sputum with a sour taste and an unpleasant odor often mixed with blood. After the diagnosis (radiological), taking microbiological materials, empirical broad-spectrum antibiotic therapy is started. Invasive procedures such as surgical open drainage, lobectomy and/or percutaneous drainage are reserved for cases refractory to conservative treatment.

Case Report This is a 14-year-old boy with symptoms of chest pain who appeared the night before the examination in the emergency pediatric clinic. The pain was severe, located in the left side of the chest, exacerbated by inhalation and changes in body position with dyspnea. The analgesic is of lesser intensity. The auscultatory left basal quieter breathing noise is in status. A slight increase in surrogate markers of inflammation was present in the laboratory findings, while radiological processing (X-ray of thoracic organs, ultrasound of the lungs and MSCT of the thorax) verified a vaguely limited nodular shadow about 4 cm in size at the height of the left hilus. A biopsy of the formation was performed. Cytological analysis of the contents revealed the diagnosis of abscess. He was treated with parenteral antibiotics ceftriaxone and clindamycin for 16 days.

Conclusion Chest pain is one of the common symptoms in an emergency pediatric clinic. The most common pain is benign, musculoskeletal, emotional or idiopathic. Cardiac and pulmonary etiology (ECG, thoracic X-ray, troponin, D-dimers, LDH) should always be ruled out. In this case, we wanted to present a lung abscess as one rare diagnosis that can only be presented by chest pain. It was difficult for the patient to distinguish whether it might be a malignant disease, which we should also consider when treating a patient whose verification of the formation of unclear etiology is verified.

Paediatric Rheumatology

431 INCREASED OCCURRENCE OF FAULTY IMMUNOSUPPRESSIVE CELLS IN CHILDREN WITH CHRONIC ARTHRITIS COULD ADVOCATE NEW TREATMENT APPROACHES

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Juvenile idiopathic arthritis (JIA) is characterized by chronic joint inflammation lasting longer than six weeks, as opposed to the acute reaction in reactive arthritis (ReA) that develops in response to an infection, lasts shorter and usually ends with full resolution of symptoms, indicating different mechanisms responsible for those common forms of arthritis in children. A number of previous studies have indicated the critical role of adaptive immune system cells in the development of many immune-mediated diseases (IMD), including arthritis. Therefore, the objective of this study was to examine the differences in occurrence of various subsets of lymphoid cells in JIA and ReA patients: regulatory T (Treg) and regulatory B (Breg) cells as immunosuppressors, type 3 innate lymphoid cells (ILC3) associated with a wide range of inflammatory disorders by an increase in IL-17 producing T cells and Th17 cells that exhibit plasticity and can be shifted to produce IFN-γ.

Treg cells, Breg cells, ILC3 and Th17 derived Th1 cells were analyzed in whole blood of ten JIA and six ReA patients by flow cytometry, using directly conjugated monoclonal antibodies. The blood samples were collected during the first visit to Pediatric Rheumatology Clinic in Sestre milosrdnice University Hospital Center in Zagreb, Croatia, while the final diagnosis of JIA or ReA was made three months after. At each visit, juvenile arthritis disease activity score (JADAS-CRP) for each patient was calculated. The median ages of the JIA and ReA patients were 6.41 and 7.22, respectively.

In patients with JIA, the CD3+CD45+CD25+CD4+CD127-CD28- subpopulation of Treg cells was significantly abundant compared to ReA patients (P=0.04). No other significant differences in cell subpopulations among different patient groups were observed.

Although Treg frequencies account for only ~5% of the total CD4+ T-cell population, they have a massive role in the immune response. Particularly,

CD28- Treg cells are characterized by reduced suppression of effector T cells yielding a pro-inflammatory cytokine profile characteristic for JIA.

Besides, they can be generated in vitro by stimulation of CD28+ Tregs with TNF-α, which is raised in JIA. Therefore, the increased occurrence of these cells in JIA patients found in our proof-of-concept study could partially explain the failure of the immunosuppressive mechanisms and the development of the chronic disease in JIA patients. This observation could have a broader clinical significance after confirmation in larger patient cohorts with multiple time points, considering Treg cells have already been shown as a novel therapeutic target in some IMDs.

432 GUT MICROBIOTA COMPOSITION IN CHILDREN WITH ADVERSE OUTCOMES OF IMMUNE-MEDIATED DISEASE

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The perplexing interactions between an organism and it's gut commensal microbiota have both potentiating and detrimental effects on innate and adaptive immunity and consequentially the development of several immune-mediated diseases. Juvenile idiopathic (JIA) and reactive arthritis (ReA) are two adverse outcomes of such disorder in children. This study aimed to assess the differences in the presence of subtypes of Escherichia coli (E coli), one of the most abundant bacteria in the microbiota, in the stool of JIA and ReA patients.

Stool samples of 14 patients with joint swelling were collected during their first visit to Pediatric Rheumatology Clinic in Sestre milosrdnice University Hospital Center in Zagreb, Croatia. Three months later, the diagnosis of JIA was made in seven patients, while the others were classified as ReA. The samples were analyzed by mass spectrometry on nanoLC-Synapt G2 Si instrument. To identify the most abundant E coli

subtypes, specialized software named Protein Reader with implemented Dust algorithm have searched through the NCBI nr database, that contains the records of more than 400 E coli subtypes. The median age of patients was 7.14 and 7.11, respectively.

Various E coli subtypes (P0301867.1-10, O104:H4, O103: H25, O111:H11, KTE and K) were three times more abundant in patients with JIA, while in children with ReA, the abundance of diarrheagenic E. coli (DEC) was detected.

Many studies have speculated the influence of gut microbiota in the development of arthritis in children. Despite the technological advancements in the examination of microbiota composition, there are still many limitations imposed by patient selection, methodology and data analysis.

Besides, without the proper definition of 'healthy' microbiome as a reference standard, it is challenging to distinguish alterations responsible for diseases development. In our proof-of-the-concept study microbiota was therefore compared in two groups of patients both presenting with arthritis.

Since E coli is one of the paramount bacteria in gut microbiota with more than 600 recognized subtypes, it is reasonable to assume that described differences can have a potential impact on the gut environment, with the contribution to the development of the chronic disease in JIA patients or the resolution of symptoms in children with ReA. While this observation needs conformation in multiple time points and larger patient cohorts, it pinpoints gut microbiota as a potential new therapeutic target in the treatment of chronic inflammatory diseases.

433 LONG TERM FOLLOW-UP OF THE PATIENTS WITH ANTI NUCLEAR ANTIBODY POSITIVITY WHO HAD INITIALLY NO IDENTIFIABLE RHEUMATIC DISEASES

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Anti-nuclear antibodies (ANA) are a group of the antibodies that develop against intracellular components of the cells. It is usually useful for diagnosing some of the connective tissue diseases like systemic lupus erythematosus, mixed connective tissue disease.

But it is reported that its positivity rate is about in healthy individuals.

Therefore, it can be confusing to check ANA test, if there is not really high suspicion for connective tissue diseases or juvenile idiopathic arthritis.

We aimed to evaluate results of long-term follow-up of the patients with ANA positivity who had initially no identifiable rheumatic diseases.

Six hundred and ninety-four patients with ANA positivity who did not diagnosed as any of the rheumatic diseases at the first examination were found in database. Two hundred and eightytwo patients of them were called so far and questioned about their demographic features and symptoms that are related with rheumatic diseases.

Mean age of the patients at the time of study and at the time of testing were 13.4± 4.5 and 9.1±4.0 years. The female: male ratio was 1.05. Mean follow-up duration was 4.3±2.8 years. Most common reasons for the request for ANA test were arthralgia (n:99 (D.1)) and skin eruptions (n: 54 (24.1)). ANA testing was most commonly requested by a general pediatrists.

Most of the diseases(Hypermobility Syndrome, Urticaria, Hypothyroidism, Transient synovitis, Idiopathic Thrombocytopenic Purpura, Scoliosis) were diagnosed in patients with ANA positivity were not related with autoimmune mechanisms that associated with ANA positivity therefore, these diseases are thought to be coincidence. Only in 1 patients, systemic lupus erythematosus that has certain association with ANA positivity were diagnosed.

We are reporting that in only 0.3% of patients with ANA positivity who don't have any diseases diagnosed initially, were diagnosed as rheumatologic diseases during to the follow-up period.

Since positivity of ANA is also common in the healthy population, requesting this test in only patients with high suspicion for connective tissue disease will reduce confusion in terms of diagnosis.

434 CASTLEMAN DISEASE PRESENTED WITH PROLONGED FEVER OF UNKNOWN ORIGIN

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Castleman disease presented with prolonged fever of unknown origin– a case report Janjic T(1), Pavlovic M(2), Lamot L(3), Stepan J(2), Harjacek M(3), Vidovic M(3)

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Fever is the most common cause for which children and their caregivers seek medical attention. If accompanied by elevated blood inflammatory markers, infectious diseases are suspected. However, if microbiological findings are negative, and if there is no response to antimicrobial therapy, more careful and comprehensive evaluation is required. Amongst many disorders, one of the rare but often misdiagnosed cause is Castleman disease (CD). This is a heterogeneous group of lymphoproliferative disorders with similar histopathologic features divided into three types. Unicentric CD involves one or more enlarged lymph node(s) in a single region of a body while multicentric Castleman disease involves multiple regions of lymphadenopathy and is further subclassified in HHV-8 positive and HHV-8 negative/idiopathic type.

We present a case of a 4.5-year-old boy who came to our pediatric emergency department with a history of intermittent fever for almost a month, cough, skin rash with spontaneous regression, fatigue, periodic leg pain, night sweats, and weight loss. The physical examination showed few mildly enlarged cervical lymph nodes, pale skin, antalgic gait and fever. Routine blood tests revealed elevated C-reactive protein level and erythrocyte sedimentation rate, anemia, and thrombocytosis. He was admitted to a Pediatric Rheumatology department for evaluation. Other laboratory tests showed elevated fibrinogen,