Case Discussion Though MIS-C is rare, with an incidence of 0.14% among children with SARS

CoV-2 infection according to one Systematic Review (Hoang Et al. 2020), it is an important new differential which must be borne in mind in cases of fever with no clear source. Both of these cases had a negative PCR test for SARS CoV-2 and no history of Covid 19 disease. No serological testing for SARS CoV-2 was available in our hospital setting. But in accordance with RCPCH guidelines this does not exclude the diagnosis of MIS-C

In previous studies as many as 71% of cases of MIS-C required PICU admission (Ahmed Et al., 2020), however not all are severely unwell and may be stable enough to be managed on a ward setting as described above.

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EXOGENIC AND ENDOGENIC FACTORS AFFECTING THE SUPPLY OF VITAMIN D IN HEALTHY CHILDREN AND ADOLESCENTS OF THE SOUTH OF RUSSIA IN WINTER-SPRING PERIODS

Svetlana Dolbnya*, Viktoriya Kur'yaninova, Yuliya Melyanovskaya, Elena Kondratyeva, Leonid Klimov, Anna Dyatlova, Anastasiya Yagupova, Anna Tsutsaeva. *Stavropol State Medical University, Stavropol 355017, Russian Federation*

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Study objectives – to analyze the influence of exogenous and endogenous factors on the supply of vitamin D in children and adolescents living in southern Russia in the winter-spring period.

The study included 27 healthy children and adolescents, aged 3 months to 16 years, living in Stavropol (45°02' N 41°58'E). Children under 3 years old were 9 (33.3%), 4 to 7 years old – 5 (18.5%), 8 to 11 years old – 6 (22.3%), 12 to 16 years old – 7 (25.9%) people. Blood sampling was performed in February-March 2018. Vitamin D provision was assessed by the serum calcidiol level. Satisfactory supply was diagnosed at a level of 25 (OH) D 30-100 ng/ml, insufficiency – 20 to 30 ng/ml, deficiency – less than 20 ng/ml.

The study of polymorphism of biotransformation genes was carried out by PCR and subsequent RFLP analysis. Polymorphisms selected for study included CYP2C9*2 (430C>T; R144C), CYP2C9*3 (1075A>C; I359L), CYP2D6*4 (1846G>A), CYP3A4*1B (-392C>T).

Median vitamin D availability was 34.6 [23.5-44.6] ng/ml. Vitamin D deficiency was detected in 5 (18.5%) children, deficiency was also found in 5 (18.5%) children, satisfactory provision was revealed in 17 (63.0%) children.

There is a negative correlation between the age of children and the level of 25(OH)D: $r = -0.69$, $p = 0.0001$, as well as between body weight and calcidiol level $r = -0.64$, $p = 0.0004$.

Direct correlation was found between the dose of cholecalciferol products and serum 25(OH)D level, $r = -0.60$, $p = 0.001$.

With CC polymorphism (CYP2C9*2) 25(OH) D < 30 ng/ml was detected in 8 (80.0%) children, and more than 30 ng/ml – in 2 (20.0%), with CT – in 2 (20.0%) and in 2 (11.8%) respectively. With polymorphism AA (CYP2C9*3) 25(OH) D < 30 ng/ml was in 9 (90.0%) children, more than 30 ng/ml – in 15 (88.2%), with CA – in 1 (10.0%) child and in 2 (11.8%) children respectively. With TT polymorphism (CYP3A4*1B) 25(OH) D < 30 ng/ml was detected in 9

(90.0%) children, and more than 30 ng/ml – in 16 (94.1%) children, with TC – in 1 (10.0%) and in 1 (5.9%) respectively. With polymorphism GG (CYP2D6*4) 25(OH)D < 30 ng/ml was detected in 7 (70.0%) children, and more than 30 ng/ml – in 13 (76.5%) children, with GA 25(OH)D < 30 ng/ml was in 2 (20.0%), more than 30 ng/ml – in 4 (23.5%), AA was only in 1 (10.0%) child with vitamin D less than 30 ng/ml.

Insufficient vitamin D levels were found in 37.0% of healthy children and adolescents living in the Southern Russia. The serum calcidiol level depends on age; the older is the child, the higher is the likelihood of hypovitaminosis D. Intake of cholecalciferol product is an effective way to prevent vitamin D deficiency and insufficiency, while hypovitaminosis D was not convincingly associated with any of the studied polymorphisms of biotransformation genes: CYP2C9*2, CYP2C9*3, CYP2D6*4, CYP3A4*1B.

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IRON DEFICIENCY ANEMIA IN ADOLESCENT – AN UNEXPECTED DIAGNOSIS: CASE REPORT

Alexandra M Rodrigues*, Rita Andrade, Joana Filipe Ribeiro, Catarina Francisco, Leonor Salicio, António Manso, Sónia Santos. *Hospital de Sousa Martins – Unidade Local Saúde da Guarda, Guarda, Portugal*

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Background Iron deficiency anemia (IDA) in adolescents is very common. The major causes at this age are an inadequate diet. Obesity or malnutrition are also causes of IDA. Besides that, many adolescents have genital losses (girls) or gastrointestinal tract disorders like inflammatory bowel disease, coeliac disease, hemorrhoids or diverticulitis. Moreover, less common chronic or acute diseases can cause this anemia.

Case Report A 17 year old female was oriented from primary care to pediatric evaluation because of iron deficiency anemia with failure of oral iron treatment after six months. In pediatric evaluation, the adolescent presented inadequate diet and no other problems. There were doubts about compliance with the iron treatment previously prescribed. She was previously healthy, had no symptoms or history of hereditary diseases or other family relevant pathology and had regular menstruation. As such, in the first evaluation, an extensive analytical study was requested, a more assertive oral iron treatment was initiated and diet correction was explained. One month later, the adolescent maintained IDA. As such, the iron treatment was doubled. Besides that, a slight increase in fecal calprotectin and thrombocytosis was detected. The rest of the analytical study did not have any changes. Thus, gastroenterology evaluation was requested for suspicion of inflammatory bowel disease. After three months, the adolescent returned and referred feeling right hypochondrial pain over the last two months which was controlled with paracetamol. Ultrasound evaluation of the abdomen was performed and revealed circumferential thickening of the ascendant colon and many mesenteric adenopathies. A CT scan was done which showed an eight centimeter long tumoral mass in the ascendant colon, as well as an inferior vena cava involvement and bulky adenopathies in venous drainage.

The adolescent was transferred to a central hospital and evaluated by pediatric oncology and surgery. A percutaneous biopsy revealed mucinous adenocarcinoma with colorectal phenotype. This diagnosis led to a surgery in which laparoscopic right hemicolectomy, epiploon excision and peritonectomy were

done. After surgery, T4aN1bM1 – stage IV was established. Neoplastic markers were all negative and a KRAS gene mutation was detected.

Currently, she has a fully implanted central venous catheter and is doing adjuvant chemotherapy.

Conclusion Iron deficiency anemia is very common in adolescents but sometimes worst diseases emerge. Adenocarcinoma in adolescents is very rare and is commonly diagnosed in advanced stage presentation. Diagnostic is facilitated when abdominal symptoms begin or when there are familiar predisposing syndromes.

67 PATHOMORPHOLOGICAL FEATURES OF RHABDOMYOSARCOMAS IN PEDIATRIC PATIENTS

Ekaterina Orlova*, Trifonova Elisaveta, Sidorova Nadezhda. *St. Petersburg State Pediatric University*

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We want to explore the specific morphological manifestations, determine the frequency of different histological variants, as well as identify local mutations of genes determining the development of these tumors.

Medical records and histological preparations of 7 children treated with the diagnosis were analyzed at the pathologic department of St.

Petersburg State Medical University: 'Rhabdomyosarcoma' from 2001 to 2018. Histological preparations were photographed using a Pannoramic Midi 2 scanning microscope.

- Numerous star-shaped and elongated, spindle-shaped cells irregularly distributed among the stroma were found in embryonic RMS (ERMS) preparations. Elongated cells with eosinophilic cytoplasm with transverse striations in the cytoplasm were also detected.

- In pleomorphic RMS, tumor cells were determined to have a variety of shapes, including rocket-shaped, with oval nuclei and small nuclei. Large foci of myxomatosis of tumor stroma were observed.

- Alveolar rhabdomyosarcoma (ARMS) was characterized by the presence or formation of alveolar structures lined by rounded or oval-shaped tumor cells. The nuclei of these cells were kidney-shaped and/or lobulated, with a well-defined cytoplasm. Hyalinized fibrous septa were detected.

- Alveolar and pleomorphic RMS are formed from elements of muscle tissue, and in rare cases alveolar from endothelial progenitor cells after reprogramming and myogenic transdifferentiation, while ERMS has a dysontogenetic origin, that is arises from detached rudiments of muscle tissue and are transverse muscular tissue hamartoblastomas.

- Alveolar RMS is a more malignant and less differentiated tumor, for which reason the mortality rate in patients with ARMS is significantly higher than in other types of RMS.

- ARMS are associated with the FOXO1 gene fusion return system found in 90% of cases.

- 56 mutations were found in 28% of ERMS cases and included 7 mutations in rate in the RAS family, 4 mutations in FGFR4, 3 mutations in PIK3CA, 2 mutations in CTNBN1 and single mutations in BRAF and PTPN11.

68 ACUTE OTITIS MEDIA IN CHILDREN, DIAGNOSIS AND MANAGEMENT

Ana Gisela Oliveira*, João Sousa Marques, Inês Silva Costa, Sofia Reis, Joaquina Antunes, Cristina Baptista. *Centro Hospitalar Tondela Viseu EPE*

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Acute otitis media (AOM) is considered to be one of the main causes of bacterial infection in children, being a major cause of admission to the emergency department (ED) and antibiotic prescription. The prescription of antibiotics in AOM should be carefully thought, due to the increased resistance to antimicrobials.

A retrospective, descriptive, comparative analysis of a randomized pediatric population (n=1646) admitted to the ED between november 2014 and december

2019 with the diagnosis of AOM was performed. Exclusion criteria included age <28 days, chronic diseases associated with nasopharyngeal colonization by unusual microorganisms, craniofacial malformations or presence of cochlear implants. Clinical and therapeutic information was collected through clinical records. Deferred antibiotic prescription (DAP) was considered if 48 hours of anti-inflammatory therapeutic was advised before initiating antibiotics.

Statistical analysis was performed and $p < 0,05$ was considered statistically significative.

Amongst all patients, 54,3% were males and in 85,7% it was their first medical observation. The median age, at admission, was 3 years with median time of illness evolution 2 days.

Mean age was higher in the group that reported fever (3,00 vs 5,29 years, $p < 0.01$) and conjunctivitis (1,62 vs 4,01 years, $P < 0.01$), unlike in the group with otalgia (5,31 vs 1,94 years; $P < 0.01$) and otorrhea (4,54 vs 3,72 years $P < 0.01$).

DAP was the chosen conduct in 6,8% of cases, none of them <6 months.

Bilateral otitis was present in 12,3% of cases, 58,6% of which happened <2 years, with recorded DAP of 0.08% in this last group. We registered 2 cases of mastoiditis and 1 fungal infection; none had gone through DAP. Number of illness days (2,38 vs 3,12; $p < 0.01$) and patients age (5,05 vs 3,83; $p < 0.01$) was different between those with DAP vs initial antibiotic prescription.

The mean duration of antibiotic treatment in the group <2 years was 7,31 ($\pm 1,02$) days and in with ≥ 2 years was 6,83 ($\pm 1,4$) ($p < 0,01$).

Of the 1531 to whom antibiotic was prescript, 270 (17,6%) were medicated with other antibiotic than amoxicillin (excluding cases of amoxicillin allergy, recent amoxicillin, therapeutic failure and conjunctivitis).

Amoxicillin was prescribed in 66,8% of cases, followed by amoxicillin/clavunate in 20,8%, which was more prescribed in the population with associated conjunctivitis (30,3%).

Our study showed that AOM is a benign infection, with DAP not revealing worst prognosis, as described in literature. However, DAP is still underperformed, being necessary its practical application, as well as the use of first-line antibiotics, supported on current recommendations.