

Case Report

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Multisystemic inflammatory syndrome in children associated with covid - 19. A case Report

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Pediatric inflammatory multisystem syndrome (PIMS) associated with asymptomatic COVID-19 has been reported in children of various ages from infancy onwards. The dominant symptoms of PIMS are fever above 38.5 C lasting more than three days, elevated inflammatory markers, and the occurrence of symptoms from at least two systems; the digestive system and the cardiovascular system. Early diagnosis and treatment improve prognosis and may reduce life-threatening complications. We present a case of a 7-month-old infant hospitalized in the Department of Infectious Diseases and Child Neurology in Poznan.

Keywords: PIMS, child, nurse**Introduction**

PIMS - Pediatric inflammatory multisystem syndrome associated with coronavirus disease or MIS-c - Multisystem inflammatory syndrome in children [1]. PIMS results from a disturbance of immune homeostasis after an earlier (about 2-4 weeks) asymptomatic infection with SARS-CoV-2 or sparse COVID-19 [2]. In children, the diagnosis of the disease is based on meeting specific criteria [2, 3]. Most commonly, the onset of PIMS is associated with gastrointestinal symptoms such as severe abdominal pain and vomiting; elevated inflammatory markers are confirmed in laboratory tests. Another picture of PIMS may be similar to Kawasaki disease. [2, 4]. It now functions as a separate disease entity under the name COVID-19-associated multisystemic inflammatory syndrome, unspecified - U 10.9 [1].

Case report

A 7-month-old girl was transferred from a first referral hospital to the University Hospital because of confirmed SARS-CoV-2 infection. According to the history, it had a fever of 39.9C for 4 days and did not respond to antipyretics. The initial diagnosis of acute

pyelonephritis of E.coli ESBL etiology was made and ceftriaxone and meropenem were started. On admission to the Clinic the child was sleepy, pale, apathetic, crying, unwilling to take liquids and food. On admission, its body temperature was 39C, HR 140-150, SpO2-96%. Single coughs were observed. Auscultation over the lung fields was normal, symmetric alveolar murmur, regular heart rate, clear tones. On abdominal examination peristalsis was increased, the abdomen was difficult to evaluate, tender, painful, negative peritoneal and meningeal symptoms. Peripheral lymph nodes were palpable on physical examination, the throat was clear. No peripheral oedema was found. A maculopapular rash on the chest skin was observed. Abdominal ultrasound was performed - retroperitoneal space vessels obscured in the epigastrium, otherwise normal, intestinal loops slightly dilated. Free, anechoic fluid in the peritoneal cavity. Small amount of fluid in the pericardial sac at the apex of the heart, 10 mm. Both kidneys were normal and not enlarged. Chest X-ray was performed - pulmonary fields without focal changes. ECG was normal. The laboratory results obtained showed:

Table: Laboratory Test Results

	Day 1	Day 2	Day 5	Day 7	Day 10	Day 14	Laboratory Standards
PLT	670	590	500	410	300	260	150-400 10 ³ /ql
Fibrynogen	700	680	440	380	300	280	180- 350 mg/dl
D-Dimers	69,63	55,9	49	15	0,55	0,53	<0,55 mg /dl
CRP	9,1	8,2	7	2,5	0,43	0,43	<0,5 mg /dl
Procalcitonin	2,9	2,4	1,5	1	0,28	0,21	< 0,5 ng/ml
LDH	580	500	450	380	350	350	180-430 IL/l
Glucose	34	85	89	90	89	84	60-101 mg/dl
BNP	155,2	140	131,5	98	91	87	<100 pg/ml
Albumins	2,9	3,2	3,5	3,9	4	3,9	3,8- 5,4 g/dl
Triglycerides	192	170	145	130	111	113	30,6- 105,0 g/dl

Antibodies to SARS-CoV-2 positive in both classes. Based on the clinical picture and test results, PIMS was diagnosed, immunoglobulin infusion therapy (Octagam 2 g/kg), acetylsalicylic acid and thromboprophylaxis were started. Antibiotic therapy was continued due to urinary tract infection. In the cardiological evaluation, the general condition was stable, without features of overt heart failure, preserved myocardial contractility, without respiratory effort. On the next day of hospitalization, the child was in stable condition. The body temperature was 38C; slight admixture of blood was found in the respiratory secretion. In the following days the general condition and laboratory results improved. The patient was discharged after 14 days of hospitalization with the diagnosis of multisystemic inflammatory syndrome related to SARS-CoV-2 infection, PIMS and acute pyelonephritis of E. coli ESBL positive etiology.

Summary

A seven-month-old infant diagnosed with PIMS required comprehensive specialized care in the inpatient setting. After discharge

home, health monitoring was recommended for min. 6 weeks (observation of general condition, respiratory function, cardiovascular and neurological status).

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