Vasodilatory shock in 15 years old girl in Bulgaria

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Introduction:

Multisystem inflammatory syndrome in children (MIS-C) related to COVID-19 is a new condition the aftermath of which is yet to be studied both in Bulgaria and globally.

Clinical manifestations of MIS-C are:

- Children and adolescents 0-19 of age
- Fever (38-40 °C), >3 days
- Skin rashes, nonsuppurative bilateral conjunctivitis
- Inflammation (CRP, ↑procalcitonin, neutrophilia, lymphopenia)
- Multi-organ dysfunction (shock, cardiac, respiratory, GIT or neurological disorder)
- Exclusion of any microbial cause
- Coagulopathy (by PT, PTT, ↑D-dimers)
- SARS-CoV-2 RT-PCR or antigen test and serology may be positive/negative, or only evidence with COVID-19.^{1,2}

Our patient:

- 15 ys old girl with fever – 39.5 °C, vomiting, abdominal pain for 5 days.
- Antigen and RT-PCR for COVID-19 – negative.
- Tender painful abdomen, (-) peristalsis
- Tachycardia (136/min)
- Bloomberg +/-
- Anuria

References: 1. World Health Organization. Multisystem inflammatory syndrom in children and adolescents with COVID-19.
2. Royal College of Paediatrics and Child Health Guidance: paediatric multisystem inflammatory syndrome temporally associated with COVID-19

Lab results at admittance

WBC (4.0-10.0) x10 ⁹ /L	11.90
Neutrophils (2.00-7.50) x10 ⁹ /L	10.63
Lymphocyte (1.00-4.00) x10 ⁹ /L	0.74
Platelet (140-440) x10 ⁹ /L	180
CRP (0.0-5.0) mg/L	187.7
Procalcitonin (<0.5) ng/mL	22.87
Fibrinogen (2.38-4.98) g/L	5.50

- Abdominal US – ascites in ileocecal area and slightly enlarged of appendix.
- CT of abdomen – enlarged appendix and mesenterial lymphadenopathy.

Operation on the 10th hour of admittance. An indurated intestinal area of 15/15 mm was found, a normal appendix and many enlarged mesenterial lymph nodes.

Complicated postoperative period at PICU:

- Fever
- Hypotonia – 75/39 mmHg
- Tachycardia – 155/min
- Tachypnea - 40/min
- Photophobia, myalgias, neck rigidity
- Diarrhea
- Small pleural effusions and ascites.
- EchoCG – normal.
- Lab – ↑CRP, hypoproteinemia, hypoalbuminemia, ↑ D-dimers
- Positive serology for SARS-CoV-2 – **IgG – 47.4 AU/mL** (<12.0 –negative; >15.0 – positive)
- **Outcome** – complete recovery on 16th day

Discussion:

MIS-C is a clinical challenge because of the wide differential diagnosis at presentation.

In this case the acute abdomen was the main clinical feature without any skin and cardiac involvement.

The treatment of MIS-C includes high dose IVIG and/or GK.

The quick and excellent clinical response to the applied therapy supports the hypothesis of immune hyperactivity pathogenesis.

Therapy of the patient

Conclusions:

MIS-C is going to be a subject of further analysis and clinical trials.

Gaining experience in the diagnosis and the treatment strategy of MIS-C, hopefully, will reduce mortality, necessity of intensive care and long-lasting complications in patients.

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