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LETTER TO THE EDITOR

Long-COVID symptoms after multisystem inflammatory syndrome in children during different pandemic waves – remarks of paediatric cardiologists related also to Kawasaki disease

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Dear Editor,

We have read with great interest the paper published recently in *Polish Paediatric Journal* [1] regarding long-COVID symptoms after multisystem inflammatory syndrome in children. Paediatric inflammatory multisystem syndrome (PIMS) is a rare but severe condition occurring approximately 2–6 weeks after acute respiratory SARS-CoV-2 infection. Diagnosis is established by clinical symptoms: high fever more than 3 days and gastrointestinal or mucocutaneous, cardiovascular, neurological, or respiratory symptoms. The circulatory system can show signs of myocarditis, shock, pericardial effusion, and coronary artery aneurysms (CAA) – the latter can be evaluated by ECHO. A higher frequency of fatiguability/weakness was observed in children in the original (Alpha) group than in the Delta and Omicron variant surges [1]. Because of some similarities, PIMS is sometimes called Kawasaki-like disease. The treatment strategy in PIMS (similarly to Kawasaki disease – KD) is well established, including immunoglobulin IV therapy (IVG) [2]. It is our clinical impression than during the Omicron COVID waves PIMS disappeared. KD is very important in paediatrics with potential possibility of CAA (especially when not treated by intravenous gammaglobulin infusions [IVG]), which was described by our team several times [2–4]. In the mentioned paper [1], in the acute phase of PIMS, cardiac failure with systolic function impairment was frequent (38.8%); unfortunately, the presence of CAA was not analysed. KD is a leading cause of acquired heart disease in the USA [5].

The numbers of survivors of KD and PIMS are growing, but it is unknown if these individuals carry a higher risk of atherosclerotic coronary disease [5, 6]. Differences between PIMS and KD were analysed by us and by others [7–9] and are presented in Table 1.

The main message from this letter is that in young patient with suspicion of non-atherosclerotic coronary artery disease, echocardiography or coronarography should exclude the possibility of CAA caused by KD or PIMS.

TABLE 1. Some chosen differences between Kawasaki disease and paediatric inflammatory multisystem syndrome (PIMS)

Factor	Kawasaki disease	PIMS
Median age (years)	2.7	9 (< 21)
Platelet count	Increased	Normal or decreased
Fever	Present	Present
CRP	Increased	Very high
LV dysfunction	Usually absent	Frequent
Gastrointestinal illness	Usually absent	Frequent
SARS-CoV-2 infection	Absent	Present
BNP and troponin I level	Normal	Increased

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