

ELECTROCARDIOGRAPHIC AND ECHOCARDIOGRAPHIC FOLLOW-UP IN CHILDREN WITH MILD-MODERATE SARS-COV2 INFECTION

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BACKGROUND: Cardiac alterations associated with COVID-19 have been described even in pediatric population, for example: arrhythmias, cardiac dysfunction, coronary injuries. Given the persistence, in some patients, of symptoms after the disease, we focused on evaluation of possible late cardiovascular involvement in children with past paucisymptomatic SARS-CoV2 infection.

METHODS: A single centre retrospective study was performed and included 120 children with previous mild COVID-19 disease, who were non-hospitalized. Demographics, symptomatology, ECGs, echocardiographic data were collected. We included patients infected from the first wave on and excluded patients with established cardiac involvement in MISC.

Age (years)	8 (4-11)*	Mean	119,8	Age	6-11 month	1-2 years	3-4 years	5-7 years	8-11 years	12-17 years
Months from infection	5 (3-7)*	median	120,0	Mean	100,3	104	111,16	116,09	125,3	128,5
Male	57,5%**	Mode	120,0	STD	11,7	8,3	16,54	14,6	19,2	17,2
Female	42,5%**	Range of variation	95,0	1 quartile	89,75	96,5	100,75	106,5	120	120
*median (interquartile range) **%		Interquartile range	20,0	Median	104	110	114	120	126	124
		Variance	338,6	2 Quartile	104,5	110	120	128,5	135	140
		Standard Deviation	18,3	Q3	14,75	13,5	19,25	22	15	20
		Asymmetry	0,1	Table III						
		kurtosis	0,0							
Table 1		Table 2								

RESULTS: The mean of the period between infection and the cardiologic follow-up was 5,05 months, the median time 5 months (STD 2,98; 1-2 quartile 3-7 months; IQR 4 months), with a mode of 7 months. (Table I) We divided our cohort into 3 groups: asymptomatic group (20%), paucisymptomatic group (58%) and the moderate group (20%). 8 on 120 patients (6%) complained palpitations as post-covid sign, nevertheless only two patients had ECG signs of tachycardia. Sinusal arrhythmias were seen in 35 (29%) children (of which only two with tachyarrhythmias), focal block of right bundle branch in 9 (7%) patients. The heart rate of almost all the patients was within normal limits for age (median 90 bpm), only one patient had supraventricular tachyarrhythmia, ectopic supraventricular heartbeats, ventricular repolarization with tendency to ST segment depression. PR interval: although in almost all the patients it was within normal range for age, we noted a tendency to shortening. Only in two patients (1,6%) there were an effective shortening of the PR interval below the minimum limit for age, but in 25 patients (21%) we noted an approximation of the PR interval to the minimum limit for age. However, the correlation index of PR interval behaviour and severity of symptoms indicated a weak correlation (0,016). (Table II-III) About echocardiographic findings, all the patients had normal value of EF%, FS%, TAPSE; we noted PAPS>20 mmHg in 14 patients (11,6%) and a PAPS>24 mmHg in 2 patients (1,6%). The median PAPS in our cohort was 15 mmHg (IQR 10-17). We found mitral regurgitation in 4 patients (3,33%), mild mitral insufficiency (1 patient) and thinning of foramen ovale (1 patient). No coronary abnormalities were detected.

CONCLUSION: We included in our series only paucisymptomatic patients and we had only slight but significant cardiac involvement. Despite these results, we recommend a cardiac follow-up also in paucisymptomatic children to improve certainty of complete recovery from covid-19 because of cardiac viral tropism and parental concern about a possible late cardiac involvement.