CARDIORESPIRATORY FITNESS IN PEDIATRIC PATIENTS WHO RECOVERED FROM ACUTE COVID19 ILLNESS AND MULTISYSTEM INFLAMMATORY SYNDROME IN CHILDREN ASSOCIATED WITH

RUSH UNIVERSITY Children's Hospital

COVID-19 (MIS-C)
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Abstract

- Over 12.8 million children have tested positive for COVID-19 and 6,851 have been reported to meet MIS-C case definition by the CDC, since the beginning of the pandemic.
- Up to 80% of patients with MIS-C have presented with cardiac involvement of diverse severity.
- We aim to describe the short-term effects of COVID-19 and MIS-C in cardiorespiratory fitness (CRF), by cardiorespiratory exercise testing (CPET), in children and adolescents who have recovered from these cardiovascular inflammatory processes.

Methods

- Retrospective analysis of 18 patients who have been diagnosed from acute COVID-19 and MIS-C to determine the level of CRF after clinical recovery.
- CPET variables of interest were compared between diagnosis groups as well as between age and gender groups using two-way ANOVA.
- Patients included were 2-21 years old and had been hospitalized between January 2020 and March 2022 to Rush University Medical Center

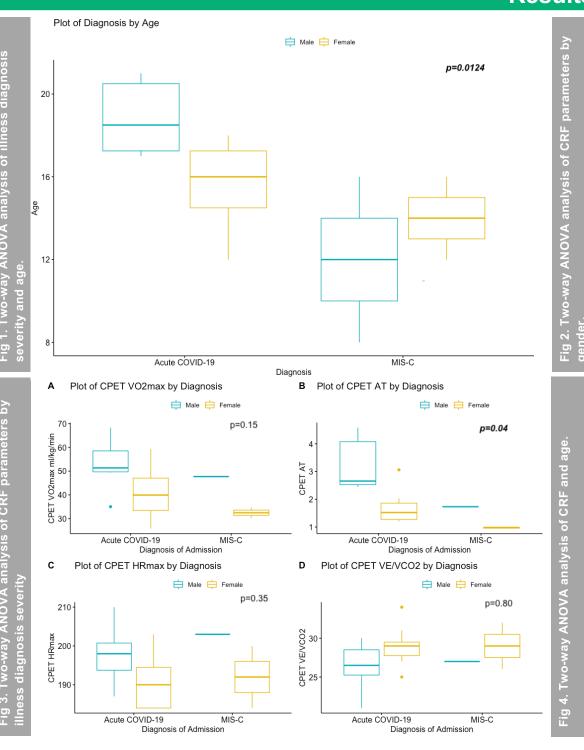
Results

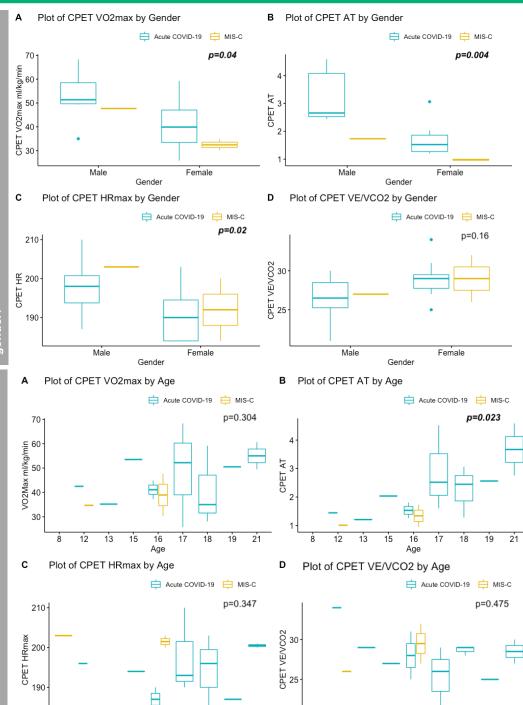
- There was a significant association between younger age and diagnosis severity (p=0.01).
- Females had significantly lower cardiorespiratory fitness after clinical recovery regardless of admission diagnosis of acute COVID-19 illness or MIS-C and age, with decreased CPET VO2max (p=0.04) CPET HRmax (p=0.02) and CPET AT (p=0.004).
- There was no statistically significant aggregate or additive difference in CPET VO2max after clinical recovery between patients with acute COVID-19 illness and MIS- C (p=0.25) or by requirement of vasoactive medications. (p= 0.44).
- ❖ Patients diagnosed with MIS-C and younger patients had lower CPET AT after recovery regardless of gender (p=0.04, p=0.02).

Conclusion

MIS-C diagnosis, young age and female gender show significantly lower cardiorespiratory fitness levels after clinical recovery from of acute COVID-19 illness or MIS-C and age.







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