# Hematologic manifestations of SARS-CoV-2 infection and MIS-C in hospitalized children. Results of the PICNIC registry.

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## Abstract

Introduction: Hematologic complications of SARS-CoV-2 infection are well described in hospitalized adults with correlation to adverse outcomes. Information published in children has been limited. Methods: An international multi-centered retrospective registry was established to collect data on the clinical manifestations of SARS-CoV-2 or multisystem inflammatory syndrome (MIS-C) in hospitalized children between February 1, 2020 – May 31, 2021. This sub-study focused on hematologic manifestations. Study variables included patient demographics, comorbidities, clinical presentation, course, laboratory parameters, management, and outcomes. Results: Nine hundred and eighty-five children were enrolled and 915 (93%) had clinical information available; 385 (42%) had symptomatic SARS-CoV-2 infection upon admission, 288 had MIS-C (31.4%) and 242 (26.4%) had alternate diagnosis with SARS-CoV-2 identified incidentally. During hospitalization, 10 children (1%) experienced a thrombotic event, 16 (1.7%) had hemorrhage and 2 (0.2%) had both thrombotic and hemorrhagic episodes. Significant prothrombotic comorbidities included congenital heart disease (p-value = 0.007), central venous catheter (p = 0.04) in children with primary SARS-CoV-2 infection; and obesity (p-value= 0.002), cytokine storm (p= 0.012) in those with MIS-C. Significant prohemorrhagic conditions included age > 10 years (p = 0.04), CVC (p= 0.03) in children with primary SARS-CoV-2infection; and thrombocytopenia (0.001), cytokine storm (0.02) in those with MIS-C. Eleven patients died (1.2 %) with no deaths attributed to thrombosis or hemorrhage Conclusion: Thrombotic and hemorrhagic complications are uncommon in children with SARS-CoV-2 infection and observed with underlying co-morbid conditions. Understanding the complete spectrum of hematologic complications in children with SARS-CoV-2 infection or MIS-C requires ongoing multi-center studies.

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