

COVID-19 PATIENTS	PEDIATRIC PRACTICE
<p>BRAIN AND NERVOUS SYSTEM</p> <p>Encephalitis - Seizures - Loss of Consciousness</p>	<p>Viral encephalitis Epileptiform syndromes Brain tumors</p>
<p>HEART AND CARDIOVASCULAR SYSTEM (possibly direct attack by virus - lack of oxygen caused by acute respiratory failure- blood vessel constriction from infection or caused by systemic inflammation)</p> <p>Acute Cardiac Injury</p>	<p>Myocarditis/Pericarditis (by infectious, autoimmune, toxic causes) Congenital Heart disease</p>
<p>Arrhythmias</p>	<p>Supraventricular tachycardia- Wolff-Parkinson-White syndrome (WPW syndrome) - Long Q-T Syndrome (LQTS)</p>
<p>Inflammation in the blood vessels</p>	<p>Kawasaki disease Infectious and autoimmune vasculitis</p>
<p>Blood Clots Disseminated Intravascular Coagulation (DIC) - Deep vein thrombosis (DVT) - Pulmonary embolism- Arteriosus thrombosis</p>	<p>DIC caused by septic shock Teens with risks factors as smoking, oral contraceptive, obesity Genetic conditions which caused thrombophilia (Factor V Leiden, Prothrombin gene mutation, or deficiencies of protein C, protein S, or antithrombin) Chronic inflammation or reumatologic and autoimmune disorders (antiphospholipid antibody syndrome) Trauma</p>
<p>LUNGS AND RESPIRATORY SYSTEM</p> <p>Pneumonia – Acute Respiratory Distress Syndrome Acute Respiratory Failure</p>	<p>Viral respiratory disorders Atypical Bacterial Pneumonia Bacterial Pleuropneumonia Bronchiolitis Asthma Pulmonary Hypertension – Pulmonary edema Respiratory disease in Neuromuscular Disorders</p>
<p>Respiratory support</p>	<p>High-flow nasal oxygen – CPAP - Endotracheal intubation performed by pediatricians of pediatric ICU and emergency department</p>
<p>Lung ultrasound</p>	<p>Used in common clinical practice by pediatricians for diagnosis, follow-up of acute and chronic respiratory diseases and their complications</p>
<p>GASTROINTESTINAL SYSTEM (GUT) (possibly from direct attack by virus on intestinal tissues or exacerbations of underlying GUT conditions)</p> <p>Diarrhea Gastroesophageal ulcers Colitis</p>	<p>Diarrhea (infectious, toxic, autoimmune causes) Gastroesophageal reflux disease (GERD) Exacerbations of Inflammatory bowel disease (IBD)</p>
<p>Nutritional management - Parenteral and enteral nutrition in patients with endotracheal intubation</p>	<p>Parenteral and enteral nutrition in children with neuromuscular and cognitive disabilities</p>
<p>LIVER (possibly from a direct attack by virus or underlying predisposing conditions or experimental hepatotoxic drugs)</p> <p>Acute Liver Injury/ Hepatitis</p>	<p>Viral and bacterial infections - Hepatitis from toxic substances and drugs - Metabolic diseases - Autoimmune diseases - Hematological and vascular diseases</p>
<p>KIDNEYS</p>	

(possibly from a direct attack by virus or underlying predisposing conditions or ventilator use or experimental drug or septic shock or rhabdomyolysis) Acute Kidney Injury	Pre-renal injury from blood loss, surgery or shock Post-renal from a blockage in the urinary tract Intoxications or medications Hemolytic uremic syndrome Glomerulonephritis Advanced stage of chronic kidney disease: Alport syndrome, nephrotic syndrome, polycystic kidney disease
SYSTEMIC INFLAMMATION (caused by cytokine storm) Macrophage Activation Syndrome-Like Disease Pediatric multisystem inflammatory syndrome (PMIS)	Primary haemophagocytic lymphohistocytosis (HLH) Secondary haemophagocytic lymphohistocytosis (malignant and non-malignant diseases as viral infections, rheumatologic and autoimmune disease)
USE OF BIOLOGICAL DRUGS Anti Interleukin-6 drugs	Commonly used in pediatric clinical practice in rheumatological, autoimmune and neoplastic diseases

Table I. List of common clinical scenarios in COVID-19 adults that overlap with common pediatric conditions. Pediatricians routinely take care of patients with viral conditions and acute respiratory distress (e.g. bronchiolitis, asthma) and that's why are confident in diagnosis and treatment. The usual management of these situations provide expertise in blood-gas analysis evaluation and in the use of devices for respiratory support, such as high-flow nasal cannula and continuous positive airway pressure (CPAP). In addition, recent evidence is pointing out that adult COVID-19 resembles systemic inflammatory syndromes⁴ and pediatricians are not new to such conditions. For instance, Kawasaki disease is one of the most common systemic conditions in children and, not rarely, biological agents are required to treat it, not to mention the new identity of pediatric inflammatory multisystem syndrome temporally associated with COVID-19 (PIMS-TS).⁵ Similarly, macrophage activation syndromes, as well as other rheumatologic conditions, do occur in secondary and tertiary level settings increasingly requiring from pediatricians to be trained in managing biological agents.