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Emergencies in pediatric oncology

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Abstract

Children with cancer are at increased risk for life-threatening complications either due to their malignancy or its treatment. Emergencies can occur at any time during the course of child's malignant disease. The causes underlying most emergencies that occur in the field of pediatric oncology fall into four main etiologic categories: metabolic, hematologic, infectious and mechanical emergencies. Many metabolic and endocrinologic problems can potentially occur in children with cancer: tumor lysis syndrome, hypercalcemia, hyperphosphatemia, syndrome of inappropriate secretion of antidiuretic hormone, hyponatremia, hypoglycemia, adrenal failure, lactic acidosis, and hyperamoniemia. Hematologic abnormalities that require emergency treatment result from either abnormal hematopoiesis (hyperleukocytosis, anemia, thrombocytopenia, neutropenia, and pancytopenia) or coagulopathy (hemorrhage and thromboembolism). Infectious emergencies include serious infections with bacteria, parasites, mycoplasmata, viruses, and/or fungi, particularly during child's periods of prolonged neutropenia. Pneumonitis, pancreatitis, hemorrhagic cystitis, enterocolitis, and tissue necrosis due to the extravasation of cytotoxic agents represent severe inflammatory states that can occur. Mechanical emergencies refer to acute events that result from direct compression, obstruction, or displacement of vital structures by a malignant process. These emergencies are conveniently classified according to the organ system affected. Respiratory (airway obstruction), cardiovascular (superior vena cava syndrome, cardiac tamponade), neurologic (spinal cord compression, increased intracranial pressure, and seizures), gastrointestinal (obstruction, pseudo-obstruction, and ileus), and urologic (urinary obstruction) mechanical emergencies require immediate medical attention.

Children with cancer experience a broad variety of critical illnesses related to both disease and therapy. Prompt recognition, evaluation, and treatment of these serious events are important to reduce morbidity and mortality in pediatric cancer patients.

Biography

Roganovic Jelena completed her M.D. and Ph.D. from Rijeka University School of Medicine, Croatia. She is board-certified in pediatric hematology/oncology and pediatrics. She completed her residency in pediatrics in Croatia, and a fellowship in pediatric hematology and oncology in Padua, Italy. She is the Chief of the Division of Pediatric Hematology and Oncology at University Children's Hospital of Rijeka, and full Professor of Clinical Pediatrics at the University of Rijeka. She has published more than 150 papers and proceedings in the field of pediatric hematology and oncology, and serves as an editorial review board member of repute.

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