

An Editorial on Children's Pulmonary Embolism

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Editorial

Children's pulmonary embolism (PE) is a rare illness with a significant death rate. PE is becoming more common as a result of improved knowledge and detection, increased survival of children with predisposing factors, and increased use of central venous catheters. Despite the fact that paediatric PE differs from adult PE, management guidelines for children are based on adult data. Thrombolysis or thrombectomy, as well as pharmacologic anticoagulation, are all options for treatment. The use of direct oral anticoagulants in children is now being studied in clinical trials. To produce pediatric-specific evidence-based guidelines for the diagnosis and therapy of PE, more research is needed. The annual occurrence is on the rise. With the number of comorbidities and severity of right ventricular dysfunction, the individual's risk of PE-related complications and death increases.

Patients with PE can be classified into four risk groups based on clinical, laboratory, and imaging data (high, intermediate-high, intermediate-low and low risk). This risk categorization has real-world therapeutic implications, ranging from out-of-hospital care for low-risk patients to reperfusion therapy for (intermediate-) high-risk patients. Treatment decisions for haemodynamically unstable patients should be made in interdisciplinary "Pulmonary Embolism Response Teams" rather than individually (PERT). Non-vitamin K-dependent oral anticoagulants (NOACs) are increasingly being considered the treatment of choice for initial and extended anticoagulation of patients with pulmonary embolism due to their comparable efficacy and better safety profile than vitamin-K antagonists (VKAs).

For PE patients with cancer, low molecular weight heparins (LMWHs) are

indicated; however, recent research suggests that factor Xa inhibitors may be an effective and safe alternative (in patients without gastrointestinal cancer). Only extended anticoagulation (at a lower dose) can prevent VTE recurrence, thus it should be considered for all patients who have experienced unprovoked episodes. In children, a pulmonary embolism is a rare but potentially fatal condition. With greater survival in children with systemic disease and developments in diagnostic modalities, there has been a growing recognition of pulmonary embolism in children. However, because there is a scarcity of information on pulmonary embolism in children, current guidelines for the management of pulmonary embolism in children are based on adult literature and are still disputed. This article discusses the history and pathophysiology of venous thromboembolism in children, as well as the current diagnostic technique and treatment recommendations. Nonetheless, from diagnosis to treatment, the majority of the algorithms used on patients in this age group have been derived from adult procedures. This article examines the advancements in children's physical education and compares them to significant events in adult PE.

A brief description of the first studies found in the paediatric literature is presented, followed by major conclusions taken from national database reports that characterise the epidemiology in children. There is also a section dedicated to children's diagnostic instruments. Commentaries on therapy and outcomes, as well as existing information gaps linked to PE in children, are included in the closing remarks. Pulmonary embolism is a rare diagnosis in children, and it's usually identified only after an autopsy. Untreated pulmonary embolism has a mortality rate of around 30%, and early diagnosis and treatment are the best ways to avoid death. The risks, clinical manifestations, pathophysiology, diagnostic methods, and management of pulmonary embolism in children are discussed in this article.

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