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Review article

Comparison of ESC Guidelines 2008 and 2014 – Diagnostic and treatment of acute pulmonary embolism

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ABSTRACT

The new revised ESC Guidelines focussing on clinical management of pulmonary embolism has been published in 2014 October issue of EHJ, and it represents current knowledge in respect of optimal diagnosis, assessment and treatment of patients with PE. Czech Society of Cardiology prepared shortened version of the new guidelines, which is published in this issue of Cor et Vasa. In our manuscript we focussed on the most important differences between these two guidelines: Recently identified predisposing factors for venous thromboembolism, simplification of clinical prediction rules, age-adjusted D-dimer cut-offs, subsegmental pulmonary embolism, incidental, clinically unsuspected pulmonary embolism, advanced risk stratification of intermediate-risk pulmonary embolism, initiation of treatment with vitamin K antagonists, treatment and secondary prophylaxis of venous thromboembolism with the new direct oral anticoagulants, efficacy and safety of reperfusion treatment for patients at intermediate risk, early discharge and home (outpatient) treatment of pulmonary embolism, current diagnosis and treatment of chronic thromboembolic pulmonary hypertension and finally, formal recommendations for the management of pulmonary embolism in pregnancy and of pulmonary embolism in patients with cancer.

Contents

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Introduction

Venous thromboembolism (VTE) is the third most frequent cardiovascular disease with an overall annual incidence of 100–200 per 100 000 inhabitants. PE is associated with significant morbidity and mortality. From all the patients suffering PE as many as 15% will die within the first month and of those who do survive, 30% will develop recurrent PE over the following 10 years. Of those who died, only 7% were correctly diagnosed during life.

The new revised ESC Guidelines focussing on clinical management of pulmonary embolism has been published in 2014 October issue of EHJ [1], and it represents current knowledge in respect of optimal diagnosis, assessment and treatment of patients with PE. This version is update of previous guidelines published in 2008 [2]. Czech Society of Cardiology prepared shortened version of the new guidelines, which is published in this issue of Cor et Vasa [3]. Therefore, in our article we focussed only on the most clinically relevant new aspects of 2014-updated version as compared with its previous version published in 2008.

This update is the most comprehensive set of guidelines yet in the field of acute pulmonary embolism (PE). They include 48 pages with 474 references, more than a dozen tables, and about half-dozen figures, plus an appendix of extra tables, available on the website.

The most clinically relevant new aspects in current version relate to following issues:

(1) Recently identified predisposing factors for venous thromboembolism
(2) Simplification of clinical prediction rules
(3) Age-adjusted D-dimer cut-offs
(4) Sub-segmental pulmonary embolism
(5) Incidental, clinically unsuspected pulmonary embolism
(6) Advanced risk stratification of intermediate-risk pulmonary embolism
(7) Initiation of treatment with vitamin K antagonists
(8) Treatment and secondary prophylaxis of venous thromboembolism with the new direct oral anticoagulants
(9) Efficacy and safety of reperfusion treatment for patients at intermediate risk
(10) Early discharge and home (outpatient) treatment of pulmonary embolism
(11) Current diagnosis and treatment of chronic thromboembolic pulmonary hypertension
(12) Formal recommendations for the management of pulmonary embolism in pregnancy and of pulmonary embolism in patients with cancer.

These new aspects have been integrated into previous knowledge to suggest optimal and whenever possible objectively validated management strategies for patients with suspected or confirmed pulmonary embolism. In this article we stressed main differences present between 2008 and 2014 ESC Guidelines.

Risk factors for VTE

Among predisposing factors for VTE with high risk (odds ratio >10) are several new factors: hospitalization for heart failure or atrial fibrillation (within previous 3 months), myocardial infarction (within previous 3 months) and previous venous thromboembolism. New moderate risk factors (odds ratio 2–9) are auto-immune diseases, blood transfusion, erythropoiesis-stimulating agents, *in vitro* fertilization, infections (specifically pneumonia, urinary tract infection, and HIV), inflammatory bowel disease and superficial vein thrombosis. Finally, new weak risk factors (odds ratio <2) are diabetes mellitus and hypertension.