

# APSR RESPIRATORY UPDATES



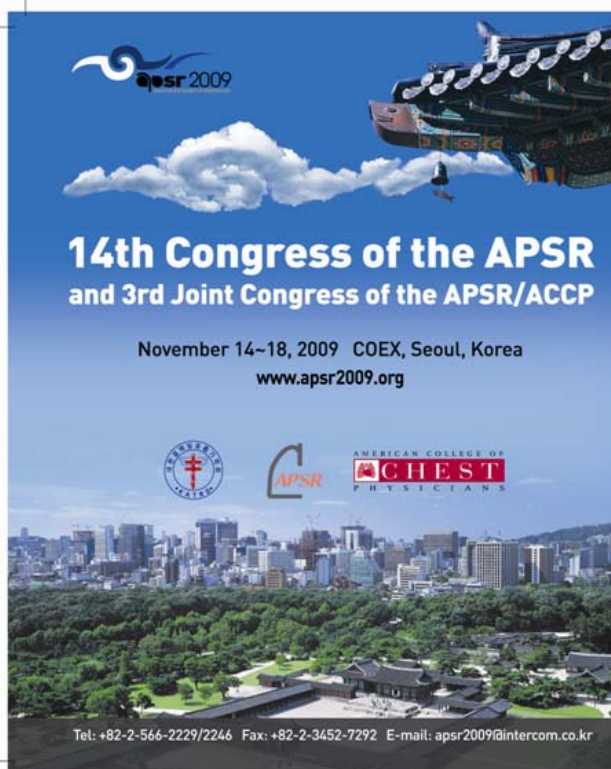
Volume 1, Issue 1

Newsletter Date: September 2009

APSR EDUCATION PUBLICATION

## Inside this issue: Venous Thromboembolism

Diagnosis of pulmonary embolism by multidetector CT	2
Acute pulmonary embolism	2
Estimation of the warfarin dose with clinical and pharmacogenetic data	2
Anticoagulation intensity and outcomes among patients prescribed oral anticoagulant therapy	2
Elevated D-dimer levels predict recurrence in patients with idiopathic venous thromboembolism	3
Residual vein thrombosis to establish duration of anticoagulation after deep vein thrombosis	3
A case-control study of seated immobility at work as a risk factor for venous thromboembolism	3
Abdominal obesity is essential for risk of venous thromboembolism in the metabolic syndrome	4
Venous thromboembolic disease and pregnancy	4
Role of thrombolysis in haemodynamically stable patients with pulmonary embolism	4



## Welcome

Welcome to the first edition of the APSR Respiratory Updates, a unique publication bringing you the most important clinical research in respiratory medicine. Each month an expert within the APSR will identify and review 10 key publications in their field. In addition to a link to the publication, a brief commentary on why the study is important will be provided. This series represents an important initiative of the Education Committee of the APSR. We hope you find it informative and useful in your clinical practice.

Professor Richard Beasley  
Email: [richard.beasley@mrinz.ac.nz](mailto:richard.beasley@mrinz.ac.nz)

### Diagnosis of pulmonary embolism by multidetector CT alone or combined with venous ultrasonography of the leg: a randomised non-inferiority trial

**Authors:** Righini M et al.

**Comments:** This RCT has shown that combining clinical assessment, D-dimer testing and multi-slice CT is a safe and effective approach to the diagnosis of pulmonary embolism. It can now be considered as the preferred strategy, with the associated facility to also undertake Doppler ultrasound in the situation of a symptomatic DVT or if there is a contraindication to CT scanning, in which case ventilation-perfusion lung scanning may also be required. Algorithms based on those used in this study and the accompanying editorial (Lancet 2008; 371: 1312-4) can now be recommended for use in clinical practice.

**Reference:** Lancet 2008; 371: 1343-52.

**URL:** [www.thelancet.com/journals/lancet/article/PIIS0140-6736\(08\)60594-2/fulltext](http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(08)60594-2/fulltext)

### Acute pulmonary embolism

**Author:** Tapson VF

**Comments:** A comprehensive review of the epidemiology, pathophysiology, prevention, investigation and management of patients with acute pulmonary embolism – worth a read and for use as a reference document.

**Reference:** N Engl J Med 2008; 358: 1037-52.

**URL:** [content.nejm.org/cgi/content/extract/358/10/1037](http://content.nejm.org/cgi/content/extract/358/10/1037)

### Estimation of the warfarin dose with clinical and pharmacogenetic data

**Authors:** The International Warfarin Pharmacogenetics Consortium

**Comments:** An interesting insight into the use of pharmacogenetics in acute medicine. While the clinical implementation of this pharmacogenetic algorithm for warfarin dosing may be some way off, the study does illustrate the potential of this approach.

**Reference:** N Engl J Med 2009; 360: 753-64.

**URL:** [content.nejm.org/cgi/content/extract/360/8/753](http://content.nejm.org/cgi/content/extract/360/8/753)

### Anticoagulation intensity and outcomes among patients prescribed oral anticoagulant therapy: a systematic review and meta-analysis

**Authors:** Oake N et al.

**Comments:** This study finally provides definitive data on the risk/benefit ratio of different INR levels in the treatment of VTE. It reinforces the current therapeutic ratio of 2 to 3 which has the lowest absolute risk of haemorrhage or thromboembolic events. When both haemorrhagic and thromboembolic events are considered, patients are somewhat safer if the ratio is slightly above, rather than below, the therapeutic range of 2 to 3. This is clinically relevant as numerous studies have shown that patients spend more time with ratios below than above the therapeutic range. These findings emphasize the importance of implementing anticoagulant monitoring services based on proven approaches, including anticoagulant clinics, patient self-management and telephone communication systems.

**Reference:** CMAJ 2008; 179: 235-44.

**URL:** [www.cmaj.ca/cgi/content/abstract/179/3/235](http://www.cmaj.ca/cgi/content/abstract/179/3/235)

Elevated D-dimer levels predict recurrence in patients with idiopathic venous thromboembolism: a meta-analysis

**Authors:** Bruinstroop E et al.

**Comments:** This meta-analysis confirms the utility of an elevated D-dimer level as a marker of increased risk of recurrence after discontinuation of oral anticoagulant therapy. These findings suggest that this widely available test could help in the selection of a sub-population of patients with idiopathic VTE, who are suitable for continuation of anticoagulant therapy. It would now seem reasonable to measure D-dimer levels at the same time that a thrombophilia screen is performed after completion of anticoagulant therapy.

**Reference:** J Thromb Haemost 2009; 7: 611-8.

**URL:** [www3.interscience.wiley.com/journal/121641503/abstract](http://www3.interscience.wiley.com/journal/121641503/abstract)

Residual vein thrombosis to establish duration of anticoagulation after a first episode of deep vein thrombosis: the Duration of Anticoagulation based on Compression UltraSonography (DACUS) study

**Authors:** Siragusa S et al.

**Comments:** This study shows the importance of residual venous thrombosis as a risk factor for recurrent VTE. This was also demonstrated in a previous study (Prandoni P *et al.* Ann Intern Med 2002; 137: 955-60). Based on these data it would be reasonable to routinely use follow-up ultrasound scanning (after 3 to 6 months of anticoagulant therapy, depending on the clinical response) to determine the duration of anticoagulation in patients with proximal DVT.

**Reference:** Blood 2008; 112: 511-5.

**URL:** [bloodjournal.hematologylibrary.org/cgi/content/abstract/112/3/511](http://bloodjournal.hematologylibrary.org/cgi/content/abstract/112/3/511)

A case-control study of seated immobility at work as a risk factor for venous thromboembolism

**Authors:** West J et al.

**Comments:** The risk of VTE during long distance air travel is well established; however, it has not been established whether an increased risk occurs in the similar situation of prolonged seated immobility at work. This case-control study provides evidence that prolonged seated immobility at work may represent an important risk factor for VTE, with the maximum time seated in a day and the time seated without getting up both contributing to the risk. Identification of seated immobility as a provoking factor may be important as it may determine the duration of anticoagulant therapy (idiopathic versus provoked event) and form the basis of occupational strategies to reduce the risk of recurrence.

**Reference:** J R Soc Med 2008; 101: 237-43.

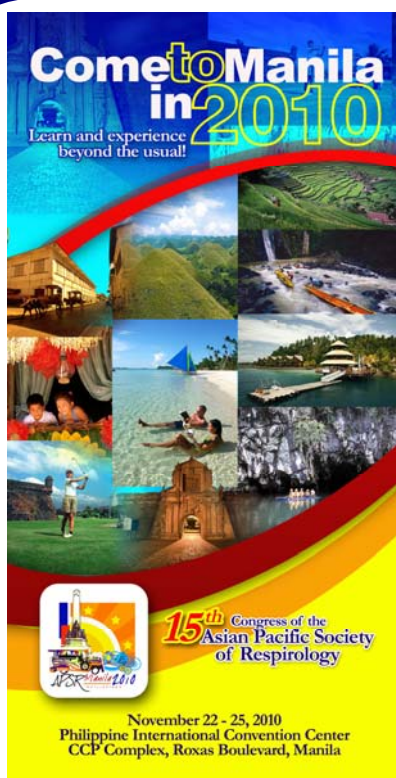
**URL:** [rsm.rsmjournals.com/cgi/content/abstract/101/5/237](http://rsm.rsmjournals.com/cgi/content/abstract/101/5/237)

*APSR Respiratory Updates is an initiative of the APSR education committee.*

*Coordinator: Prof. Richard Beasley, Medical Research Institute of New Zealand.*

*Articles selected and commented on by Prof. Richard Beasley, Medical Research Institute of New Zealand.*

*Compiled by Dr Neil Misso, Respiratory Editorial Office.*



Abdominal obesity is essential for the risk of venous thromboembolism in the metabolic syndrome: the Tromso study

**Authors:** Borch KH et al.

**Comments:** The risk of VTE can now be considered to be part of the metabolic syndrome, with abdominal obesity being a pivotal factor. This concept suggests that shared pathways exist between arterial and venous thrombosis – the clinical relevance being that treatments with known efficacy for one disease process may have benefits for the other. Evidence in support of this concept exists, with both the proven efficacy of aspirin in reducing the risk of VTE and, more recently, the efficacy of the statin, rosuvastatin, in significantly reducing the occurrence of symptomatic VTE (Glynn RJ *et al.* N Engl J Med 2009; 360: 1851-61). Long term use of both aspirin and a statin can now be considered in patients with the metabolic syndrome who have completed the required course of anticoagulant therapy for a VTE event.

**Reference:** J Thromb Haemost 2009; 7: 739-45.

**URL:** [www3.interscience.wiley.com/journal/121535951/abstract](http://www3.interscience.wiley.com/journal/121535951/abstract)

Venous thromboembolic disease and pregnancy

**Authors:** Marik PE, Plante LA

**Comments:** This article is essential reading for doctors involved in the care of pregnant women with VTE. It describes a practical approach to the diagnosis, management and prevention of VTE in pregnant women.

**Reference:** N Engl J Med 2008; 359: 2025-33.

**URL:** [content.nejm.org/cgi/content/extract/359/19/2025](http://content.nejm.org/cgi/content/extract/359/19/2025)

Role of thrombolysis in haemodynamically stable patients with pulmonary embolism

**Authors:** Proudfoot A et al.

**Comments:** An excellent editorial on the role of thrombolysis in haemodynamically stable patients with pulmonary embolism. The take home message is that it is possible through the use of the cardiac biomarkers, troponin and BNP, to identify a subgroup of patients who are at increased risk of death. Raised troponin and BNP levels indicate a markedly increased risk of death from pulmonary embolism, compared with that identified by RV dysfunction alone. A practical algorithm is proposed which can be used to identify patients in whom thrombolysis should be considered.

**Reference:** Thorax 2008; 63: 853-4.

**URL:** [thorax.bmj.com/cgi/content/full/63/10/853](http://thorax.bmj.com/cgi/content/full/63/10/853)

*Disclaimer: This publication is not intended as a replacement for regular medical education. The comments are an interpretation of the published study and reflect the opinion of the writer rather than those of the research group or scientific journal. It is suggested readers review the full trial data before forming a final conclusion on its merits. Privacy Policy: The APSR Secretariat will record your email details on a secure database and will not release it to anyone without your prior approval. The APSR and you have the right to inspect, update or delete your details at any time.*