

CHIEF EDITORS

Anh Tuan Dinh-Xuan

Dept of Cardiorespiratory Medicine,
Cochin Hospital,
University Paris Descartes,
27, rue du faubourg
Saint-Jacques,
75014 Paris,
France
Tel: 33 158412341
Fax: 33 158412345
E-mail: erj.chief-editors@ersnet.org

Vito Busasco

Dept of Internal Medicine,
Medical School,
University of Genoa,
viale Benedetto XV, 6,
16132 Genoa,
Italy
Tel: 39 0103537690
Fax: 39 0103537690
E-mail: erj.chief-editors@ersnet.org

ASSISTANT TO THE CHIEF EDITORS

Sy Duong-Quy

Tel: 33 158411942 Fax: 33 158412345
E-mail: sy.duong-quy@cch.aphp.fr

PUBLICATIONS OFFICE

Managing Editors: **Elin Reeves** and **Rachel White**

442 Glossop Road, Sheffield,
S10 2PX, UK
Tel: +44 114 267 2860 Fax: +44 114 266 5064
E-mail: elin.reeves@ersj.org.uk/rachel.white@ersj.org.uk

ASSOCIATE EDITORS

N. Ambrosino

Pisa, Italy

I. Annesi-Maesano

Paris, France

J.L. Black

Sydney, Australia

P. Chanez

Marseille, France

V. Cottin

Lyon, France

L.M. Fabbri

Modena, Italy

R. Farré

Barcelona, Spain

U. Frey

Basel, Switzerland

J. Gerritsen

Groningen, the Netherlands

P. Hiemstra

Leiden, the Netherlands

M.M. Hooper

Hanover, Germany

M. Humbert

Clamart, France

S. Kawut

Philadelphia, USA

P. Lévy

Grenoble, France

G.B. Migliori

Tradate, Italy

J. Müller-Quernheim

Freiburg, Germany

R. Naeije

Brussels, Belgium

M.I. Polkey

London, UK

G. Raghu

Seattle, USA

M. Saetta

Padova, Italy

J.-P. Sculier

Brussels, Belgium

F. Séries

Quebec City, Canada

P.D. Sly

Brisbane, Australia

J.B. Soriano

Bunyola, Spain

A. Torres

Barcelona, Spain

P.E. Van Schil

Edegem, Belgium

T. Welte

Hanover, Germany

M.A. Woodhead

Manchester, UK

S.G. Zakythinos

Athens, Greece

ADVISORS

P-Y. Brillet

Bobigny, France

A. Kettaneh

Paris, France

S. Suissa

Montreal, Canada

Methodology

Radiology

C. E. Mapp

Ferrara, Italy

E. Michelakis

Edmonton, Canada

B. Nemery

Leuven, Belgium

P. Palange

Rome, Italy

K.F. Rabe

Kiel, Germany

R. Rodriguez-Roisin

Barcelona, Spain

A.M.W.J. Schols

Maastricht, the Netherlands

N. Siafakas

Heraklion, Greece

A.K. Simonds

London, UK

P.J. Sterk

Amsterdam, the Netherlands

N.S. Zhong

Guangzhou, China

INTERNATIONAL ADVISORY BOARD

M.G. Belvisi

London, UK

E. Berglund

Gothenburg, Sweden

C. Brambilla

Grenoble, France

P.M.A. Calverley

Liverpool, UK

E. Canalis

Barcelona, Spain

U. Costabel

Essen, Germany

M. Decramer

Leuven, Belgium

R. Djukanovic

Southampton, UK

O. Eickelberg

Munich, Germany

S. Ewig

Bochum, Germany

P.N. Le Souéf

Perth, Australia



CONTENTS

VOLUME 38 / NUMBER 4 / OCTOBER 2011

EDITORIALS

- 749** Avoiding confusion in COPD: from risk factors to phenotypes to measures of disease characterisation
A. Agustí and B. Celli

- 752** Tuberculosis in prisons: anatomy of global neglect
J. O'Grady, M. Maeurer, R. Atun, I. Abubakar, P. Mwaba, M. Bates, N. Kapata, G. Ferrara, M. Hoelscher and A. Zumla

- 755** Healthcare-associated pneumonia: meeting the yeti
S. Ewig and A. Torres

- 758** Infection and remodelling: a 21st century model of bronchiectasis?
C. Ward, K. Rydell-Törmänen, G. Westergren-Thorsson, L.T. Eriksson and H. Walters

PERSPECTIVE

- 761** Bronchoalveolar lavage for the evaluation of interstitial lung disease: is it clinically useful?
K.C. Meyer and G. Raghu

ORIGINAL ARTICLES

Clinical practice

- CME article 770** Short-term safety of thoracoscopic talc pleurodesis for recurrent primary spontaneous pneumothorax: a prospective European multicentre study
P.-O. Bridevaux, J.-M. Tschoopp, G. Cardillo, C.-H. Marquette, M. Noppen, P. Astoul, P. Driesen, C.T. Bolliger, M.E. Froudarakis and J.P. Janssen

COPD

- 774** Adaptive support ventilation for faster weaning in COPD: a randomised controlled trial
C. Kiraklı, I. Ozdemir, Z.Z. Ucar, P. Cimen, S. Kepil and S.A. Ozkan

- 781** Skeletal muscle effects of electrostimulation after COPD exacerbation: a pilot study
A. Abdellaoui, C. Préfaut, F. Gouzi, A. Couillard, M. Coisy-Quivy, G. Hugon, N. Molinari, T. Lafontaine, O. Jonquet, D. Laoudj-Chenivesse and M. Hayot

- 789** Tiotropium inhibits pulmonary inflammation and remodelling in a guinea pig model of COPD
T. Pera, A. Zuidhof, J. Valadas, M. Smit, R.G. Schoemaker, R. Gosens, H. Maarsingh, J. Zaagsma and H. Meurs

- 797** Blinded 12-week comparison of once-daily indacaterol and tiotropium in COPD
R. Buhl, L.J. Dunn, C. Disdier, C. Lassen, C. Amos, M. Henley and B. Kramer, on behalf of the INTENSITY study investigators

Occupational asthma

- 804** Management of occupational asthma: cessation or reduction of exposure? A systematic review of available evidence
O. Vandenplas, H. Dressel, D. Wilken, J. Jamart, D. Heederik, P. Maestrelli, T. Sigsgaard, P. Henneberger and X. Baur

ORIGINAL ARTICLES (CONT.)

Asthma and allergy

- 812** Association between domestic mould and mould components, and asthma and allergy in children: a systematic review
C. Tischer, C.-M. Chen and J. Heinrich
- 825** Multi-symptom asthma as an indication of disease severity in epidemiology
L. Ekerljung, A. Bossios, J. Lötvall, A.-C. Olin, E. Rönmark, G. Wennergren, K. Torén and B. Lundbäck
- 833** Toll-like receptors and microbial exposure: gene–gene and gene–environment interaction in the development of atopy
N.E. Reijmerink, M. Kerkhof, R.W.B. Bottema, J. Gerritsen, F.F. Stelma, C. Thijss, C.P. van Schayck, H.A. Smit, B. Brunekreef, D.S. Postma and G.H. Koppelman
- 841** Role of Rho kinase isoforms in murine allergic airway responses
M. Zhu, P.-Y. Liu, D.I. Kasahara, A.S. Williams, N.G. Verbout, A.J. Halayko, A. Fedulov, T. Shoji, E.S. Williams, K. Noma, S.A. Shore and J.K. Liao

Pulmonary vascular disease

- 851** Endothelin receptor expression in idiopathic pulmonary arterial hypertension: effect of bosentan and epoprostenol treatment
S.M. Hall, N. Davie, N. Klein and S.G. Haworth

Familial pulmonary fibrosis

- 861** Surfactant protein C G100S mutation causes familial pulmonary fibrosis in Japanese kindred
S. Ono, T. Tanaka, M. Ishida, A. Kinoshita, J. Fukuoka, M. Takaki, N. Sakamoto, Y. Ishimatsu, S. Kohno, T. Hayashi, M. Senba, M. Yasunami, Y. Kubo, L.M. Yoshida, H. Kubo, K. Ariyoshi, K. Yoshiura and K. Morimoto

Sleep-related disorders

- 870** Role of growth hormone-releasing hormone in sleep and growth impairments induced by upper airway obstruction in rats
A. Tarasiuk, N. Berdugo-Boura, A. Troib and Y. Segev

Respiratory infections

- 878** Guideline-concordant therapy and outcomes in healthcare-associated pneumonia
R.T. Attridge, C.R. Frei, M.I. Restrepo, K.A. Lawson, L. Ryan, M.J.V. Pugh, A. Anzueto and E.M. Mortensen

Tuberculosis

- 888** Evaluation of moxifloxacin for the treatment of tuberculosis: 3 years of experience
A.D. Pranger, R. van Altena, R.E. Aarnoutse, D. van Soolingen, D.R.A. Uges, J.G.W. Kosterink, T.S. van der Werf and J.W.C. Alffenaar

- 895** Piecing the puzzle together: foreign-born tuberculosis in an immigrant-receiving country
D. Langlois-Klassen, K.M. Wooldrage, J. Manfreda, K. Sutherland, E. Ellis, M. Phypers, B. Gushulak and R. Long

Thoracic oncology

- 903** Screening for activating EGFR mutations in surgically resected nonsmall cell lung cancer
K.B. Sriram, M.E. Tan, S.M. Savarimuthu, C.M. Wright, V. Relan, R.E. Stockwell, B.E. Clarke, E.E. Duhig, I.A. Yang, R.V. Bowman and K.M. Fong

- 911** Accuracy of cell typing in nonsmall cell lung cancer by EBUS/EUS–FNA cytological samples
W.A.H. Wallace and D.M. Rassl

Paediatric respiratory disease

- 918** Computed tomography score and pulmonary function in infants with chronic lung disease of infancy
E.E. Sarria, R. Mattiello, L. Rao, M.R. Wanner, M.E. Raske, C. Tiller, R. Kimmel and R.S. Tepper

EUROPEAN RESPIRATORY *journal*

AIMS & SCOPE

The *European Respiratory Journal* (ERJ), the official Journal of the European Respiratory Society, publishes, in the English language, clinical and experimental work dealing with all aspects of respiratory medicine. In addition to original material, the ERJ prints Editorials and Reviews, as well as Technical notes, Letters and Correspondence.

This Journal is abstracted/indexed in: Ad Referendum, ADONIS, Biological Abstracts/BIOSIS, Chemical Abstracts, Current Contents: Life Sciences, Current Contents: Clinical Medicine, Elsevier BIOBASE/Current Awareness in Biological Sciences, EMBASE/Excerpta Medica, Index Medicus/MEDLINE, Medical Documentation Service, Research Alert, Science Citation Index, SciSearch, SIC Data Base and CABI Global Health.

SUBSCRIPTIONS

ERJ is published monthly by the European Respiratory Society (ERS). Twelve issues are published annually in two volumes of six issues each. The volumes for 2011 are Volumes 37 and 38.

Subscription rates for institutions (Volumes 37 & 38, 2011): £660.00 online only, £756.00 print and online; US\$1,254.00 online only, US\$1,454.00 print and online in North America. Subscription rates include air economy postage. Subscriptions are payable in advance.

Subscribers within the European Union must provide their VAT (Value Added Tax) number or add VAT to the subscription rate at the rate prevailing in their own country.

Subscriptions are managed on behalf of the ERS by: Maney Publishing, Suite 1C, Joseph's Well, Hanover Walk, Leeds LS3 1AB, UK (fax: +44 (0)113 386 8178; E-mail: subscriptions@maney.co.uk) or: Maney Publishing North America, 875 Massachusetts Avenue, 7th Floor, Cambridge, MA 02139, USA (tel: (toll-free) +1 (0)866 297 5154; fax: +1 (0)617 354 6875; E-mail: maney@maneyusa.com). All orders, payments, and claims for missing issues should be sent to Maney Publishing or to any subscription agent.

ONLINE ACCESS

All subscribers have online access to the full text of each issue as part of their subscription. The online version is available to members via www.ersnet.org. Institutional subscribers can access online through HighWire at www.erj.ersjournals.com

Members of the ERS receive the ERJ as part of their membership.

INSTRUCTIONS TO AUTHORS

Before submitting an article to the ERJ, please read and carefully follow the instructions to authors, which are available at www.erj.ersjournals.com

If you do not have access to the internet please contact the editorial office.

All manuscripts must be submitted electronically using the online submission system at <http://mc.manuscriptcentral.com/erj>

If you experience problems, please contact the Submission Helpline direct on +44 (0) 114 2672864 or contact Gill Archer (gill.archer@ersj.org.uk) the manuscript central coordinator.

All ERJ business matters should be addressed to: Kay Sharpe, European Respiratory Society Publications Office, 442 Glossop Road, Sheffield, S10 2PX, UK. Fax: +44 (0) 114 266 5064. E-mail: admin@ersj.org.uk

EUROPEAN RESPIRATORY *journal*

REVIEWERS

A full list of reviewers is available online at www.erj.ersjournals.com

EDITORIAL TEAM

Fiona Marks
Elin Reeves
Alyson Adam
Rachel White
Matthew Broadhead
Neil Bullen
David Sadler

Catherine Pumphrey
Jonathan Hansen
Victoria Morton
Claire Turner
Lee Dodd
Sarah Hill

Past Chief Editors: J-C. Yernault†; E. Berglund, Gothenburg, Sweden; P. Vermeire†; U. Costabel, Essen, Germany; M. Decramer, Leuven, Belgium; P.J. Sterk and K.F. Rabe, Amsterdam, the Netherlands and Kiel, Germany.

ENVIRONMENTAL STATEMENT

The publisher ensures that the text paper and cover board used have met acceptable environmental accreditation standards.

For all enquiries concerning advertising or marketing please e-mail marketing@ersj.org.uk

All permission requests should be sent via the ERS website at www.ersnet.org/permissions-form

Reprint and translation enquiries should be sent to admin@ersj.org.uk

© 2011 ERS. Authorisation to photocopy items for internal or personal use, or the internal or personal use of specific clients, is granted for libraries and other users registered with the Copyright Clearance Center (CCC). Please go to www.copyright.com or phone USA (978) 750 8400. UK customers should go to www.cla.co.uk. All other rights, including microfilm, electronic and/or copying reserved.

European Respiratory Journal USPS#023-615 is published monthly for \$268.00 periodicals postage paid at Folcroft, PA. POSTMASTER: Please send address changes to La Poste, P.O. Box 202, Folcroft, PA, 19032. Typesetting by H. Charlesworth & Co. Ltd. Printed in UK by Latimer Trend & Co. Ltd.

ORIGINAL ARTICLES (CONT.)

Mechanisms of lung disease

- 924** The *TERT-CLPTM1L* locus for lung cancer predisposes to bronchial obstruction and emphysema
E. Wauters, D. Smeets, J. Coolen, J. Verschakelen, P. De Leyn, M. Decramer, J. Vansteenkiste, W. Janssens and D. Lambrechts
- 932** *In utero* cigarette smoke exposure impairs somatic and lung growth in BALB/c mice
A.N. Larcombe, R.E. Foong, L.J. Berry, G.R. Zosky and P.D. Sly
- 939** *Pseudomonas aeruginosa* induces vascular endothelial growth factor synthesis in airway epithelium *in vitro* and *in vivo*
C. Martin, G. Thévenot, S. Daniel, J. Chapron, A. Tazi, J. Macey, D.J. Dusser, I. Fajac and P-R. Burgel

SERIES

SERIES "HOT TOPICS IN PEDIATRIC ASTHMA"

Edited by K-H. Carlsen, G. Hedlin and A. Bush
Number 7 in this Series

- 947** Pharmacological treatment of severe, therapy-resistant asthma in children: what can we learn from where?
A. Bush, S. Pedersen, G. Hedlin, E. Baraldi, A. Barbato, F. de Benedictis, K.C. Lødrup Carlsen, J. de Jongste and G. Piacentini on behalf of the PSACI (Problematic Severe Asthma in Childhood Initiative) group

SERIES "MATRIX METALLOPROTEINASES IN LUNG HEALTH AND DISEASE"

Edited by J. Müller-Quernheim and O. Eickelberg
Number 4 in this Series

- 959** Matrix metalloproteinases in acute lung injury: mediators of injury and drivers of repair
A. Davey, D.F. McAuley and C.M. O'Kane

SERIES "NOVELTIES IN PULMONARY REHABILITATION"

Edited by E. Clini and N. Ambrosino
Number 2 in this Series

- 971** Strategies of muscle training in very severe COPD patients
I. Vogiatzis

LETTERS

- 976** Assessing an outbreak of tuberculosis in an English college population
I. Abubakar, T. Matthews, D. Harmer, E. Okereke, K. Crawford, T. Hall, T. Collyns, G. Smith, A. Barrett and S. Baugh
- 979** Sputum induction in severe exacerbations of asthma: safety of a modified method
M.O. Vieira, E. Pizzichini, L.J. Marques Steidle, J. Kadletz da Silva and M.M.M. Pizzichini
- 981** Interleukin-18 and interleukin-18 receptor- α expression in allergic asthma
H. Imaoka, G.M. Gauvreau, R.M. Watson, S.G. Smith, B. Dua, A.J. Baatjes, K. Howie, T. Hoshino, K.J. Killian, H. Aizawa and P.M. O'Byrne
- 983** Pulmonary malakoplakia: a rare presentation mimicking extensive stage IV lung cancer
P. Mandal, W.A. Wallace and K.M. Skwarski
- 985** Interstitial lung disease in a child heterozygous for the 1549C→GAA (121ins2) mutation of surfactant protein B
F.P. Rossi, T. Salerno, D. Peca, O. Danhaive, R. Boldrini, L. Menchini and R. Cutrera
- 987** Ambulatory oxygen in interstitial lung disease
D. Visca, A. Montgomery, A. de Lauretis, P. Sestini, H. Soteriou, T.M. Maher, A.U. Wells and E.A. Renzoni

CORRESPONDENCE

- 991** Another view on the prediction of outcomes in patients with community-acquired pneumonia
S. Krüger, T. Welte and S. Ewig; P. Schuetz,
W. Zimmerli and B. Mueller for the ProHOSP Study Group
- 994** Asthma nervosum
A. Papagiannis
- 994** Respiratory *Chlamydophyla pneumoniae* resides primarily in the lower airway
W.C. Webley and D.L. Hahn; F. Wang and P.G. Gibson
- 996** AUTHOR CORRECTION

f,h,i MEETING CALENDAR

CME Credit Application Form can be found at the back of this issue

EUROPEAN RESPIRATORY *journal*

"The advertiser shall be liable for the content of any of its advertisements published according to its instructions. The advertiser shall indemnify and hold harmless the European Respiratory Society against and from any and all claims, damages, liabilities, costs and expenses whatsoever, including reasonable counsel fees, arising from the content of any of its advertisements."

ERJ online at www.ersnet.org or
www.erj.ersjournals.com



This journal is a member of and subscribes to the principles of the Committee on Publication Ethics

