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Non- Invasive Ventilation: What's New In ICU

11th Annual Edinburgh Critical Care Research Group Study Day
Friday 24th May 2019

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#whatsnewICU19

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Session Aims

- ❖ The current role of Non-Invasive Ventilation (NIV)
- ❖ The Evidence to support NIV in the Critical Care Unit
- ❖ Current thoughts and opinions
- ❖ How this session may influence your practice

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Randomised controlled trial of nasal ventilation in acute ventilatory failure due to chronic obstructive airways disease

J. Bott MCSP ^a, M.P. Carroll MD ^b, J.H. Conway MSCP ^b, S.E.J. Keilty MCSP ^a, E.M. Ward MCSP ^c, A.M. Brown MSCP ^b, E.A. Paul MSc ^c, M.W. Elliott MD ^a, R.C. Godfrey MD ^b, J.A. Wedzicha MD ^c, Prof J. Moxham MD ^a

Articles

Early use of non-invasive ventilation for acute exacerbations of chronic obstructive pulmonary disease on general respiratory wards: a multicentre randomised controlled trial

P K Plant, J L Owen, M W Elliott

Randomised controlled trial of nasal ventilation in ventilatory failure due to chronic obstructive pulmonary disease

J. Bott MCSP^a, M.P. Campbell MCSP^b, S.E.J. Keilty MCSP^a, E.M. Ward MCSP^c, A.M. Brown MCSP^c, W. Elliott MD^a, R.C. Godfrey MD^b, J.A. Wedzicha MD^c, Prof J.

↓ mortality, ↑ pH, ↓ pCO₂, ↓ breathlessness

Articles

Early use of non-invasive ventilation for acute exacerbations of chronic obstructive pulmonary disease in general respiratory wards: a multicentre randomised controlled trial

27% v 15% needed intubation and 20% v 10% died

W Elliott

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ORIGINAL RESEARCH | 1 MAY 1998

Noninvasive Mechanical Ventilation in the Weaning of Patients with Respiratory Failure Due to Chronic Obstructive Pulmonary Disease: A Randomized, Controlled Trial

Stefano Nava, MD; Nicolino Ambrosino, MD; Enrico Clini, MD; Maurizio Prato, MD; Giacomo Orlando, MD; Michele Vitacca, MD; Paolo Brigada, MD; Claudio Fracchia, MD; Fiorenzo Rubini, MD

Article, Author, and Disclosure Information

BMJ

RESEARCH

Use of non-invasive ventilation to wean critically ill adults off invasive ventilation: meta-analysis and systematic review

Karen E A Burns, clinical scientist,¹ scientist,² assistant professor of medicine,³ Neill K J Adhikari, intensivist,⁴ associate scientist,⁵ lecturer,⁶ Sean P Keenan, head,⁷ clinical assistant professor of medicine,⁸ Maureen Meade, associate professor of medicine⁹

< PREVIOUS ARTICLE | THIS ISSUE | NEXT ARTICLE >

ORIGINAL RESEARCH | 1 MAY 1998

Noninvasive Mechanical Ventilation for Weaning of Patients with Respiratory Failure and Chronic Obstructive Pulmonary Disease: A Randomized Trial

Enrico Clini, MD; Nicolino Ambrosino, MD; Enrico Clini, MD; Maurizio Prato, MD; Giacomo Orlando, MD; Michele Vitacca, MD; Paolo Fracchia, MD; Claudio Fracchia, MD; Fiorenzo Rubini, MD

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RESEARCH

Use of noninvasive mechanical ventilation to wean critically ill adults off intensive care: meta-analysis and systematic review

Enrico Clini, MD; Nicolino Ambrosino, MD; Enrico Clini, MD; Maurizio Prato, MD; Giacomo Orlando, MD; Michele Vitacca, MD; Paolo Fracchia, MD; Claudio Fracchia, MD; Fiorenzo Rubini, MD; E A Burns, clinical scientist,¹ scientist,² assistant professor of medicine,³ Neill K J Adhikari, intensivist,⁴ associate scientist,⁵ lecturer,⁶ Sean P Keenan, head,⁷ clinical assistant professor of medicine,⁸ Maureen Meade, associate professor of medicine⁹

↓ IV time, ↓ ICU LOS, ↓ pneumonia, ↓ mortality

+ effect mortality, pref COPD pts & in ICU environment

This Issue

Views **17,431** | Citations **1** | Altmetric **170**

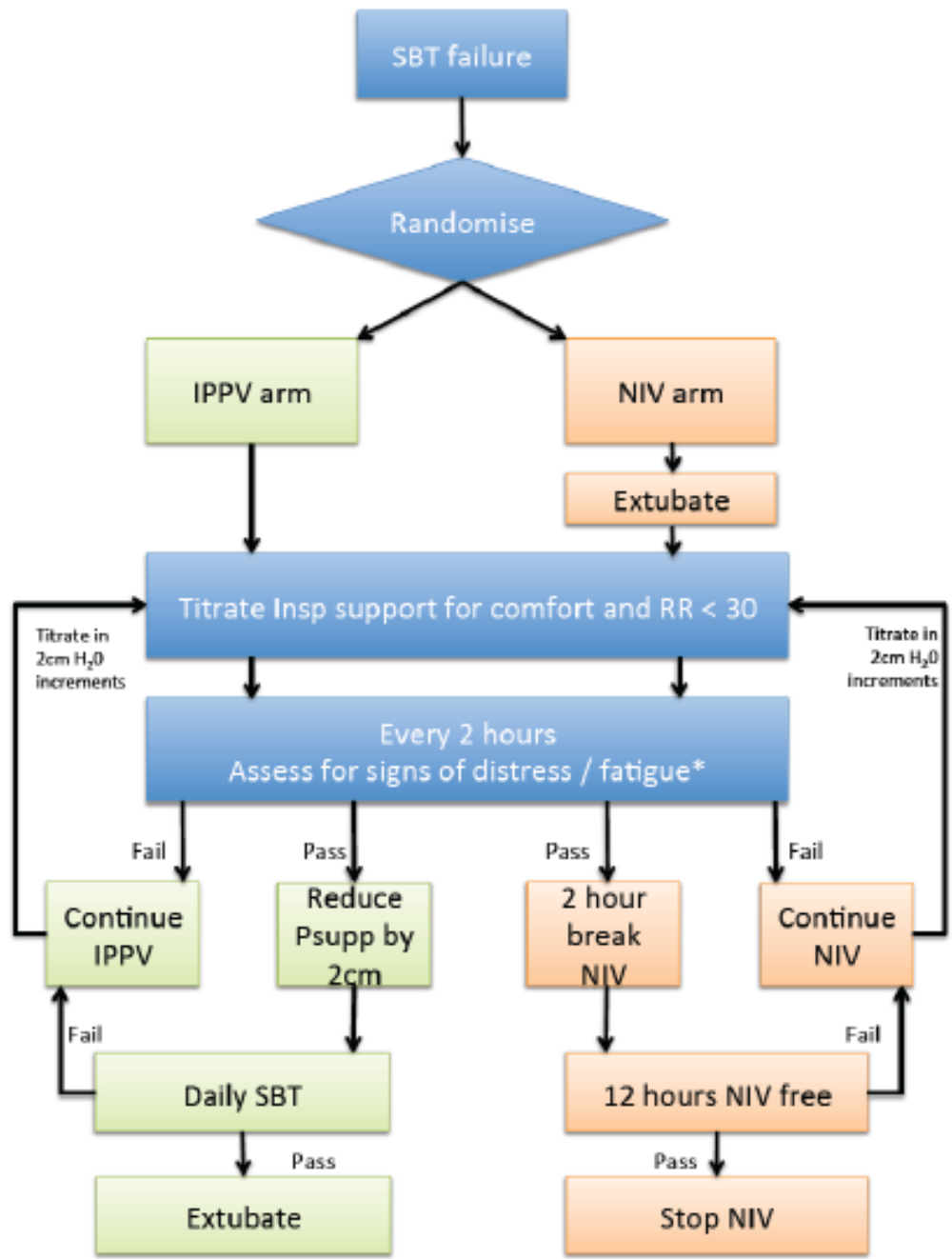
Original Investigation | Caring for the Critically Ill Patient

November 13, 2018

Effect of Protocolized Weaning With Early Extubation to Noninvasive Ventilation vs Invasive Weaning on Time to Liberation From Mechanical Ventilation Among Patients With Respiratory Failure

The Breathe Randomized Clinical Trial

Gavin D. Perkins, MD^{1,2}; Dipesh Mistry, PhD¹; Simon Gates, PhD^{1,3}; [et al](#)



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Original Investigation | Caring for the Patient

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Effect of Protocolized Weaning With Early Extubation to Noninvasive Ventilation vs Invasive Weaning on Time to Liberation From Mechanical Ventilation Among Patients With Acute Respiratory Failure

The BRISQ Randomized Clinical Trial

John A. Kress, MD^{1,2}; Dipesh Mistry, PhD¹; Simon Gates, PhD^{1,3}; et al

↓IV time, ↓sedation, ↓resp Antibiotics (VAP)

No effect: re-intubation, adverse events, trache, survival



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The role of NIV in the critically ill patient

- ❖ To prevent intubation (or as a ceiling of treatment)
- ❖ To prevent prolonged invasive ventilation (early extubation onto NIV)
- ❖ Planned extubation onto NIV (for high risk patients who may deteriorate once extubated)
- ❖ Potential 'rescue' but only in a specific cohort of patients (the evidence tells us this is not effective)

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So, despite all the
evidence why
cant/dont ICU use
NIV machines?

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Maybe because.....

- ❖ Trachies are easier
- ❖ Misconceptions of 'conscious level'
- ❖ Patients cant cough/requiring suction
- ❖ Its 'just not sexy enough

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Maybe because.....

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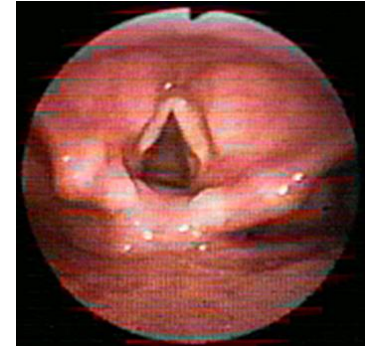
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DONT WEAN TO EXTUBATE EXTUBATE TO WEAN



Secretions

Airway



Fluid

Optimised

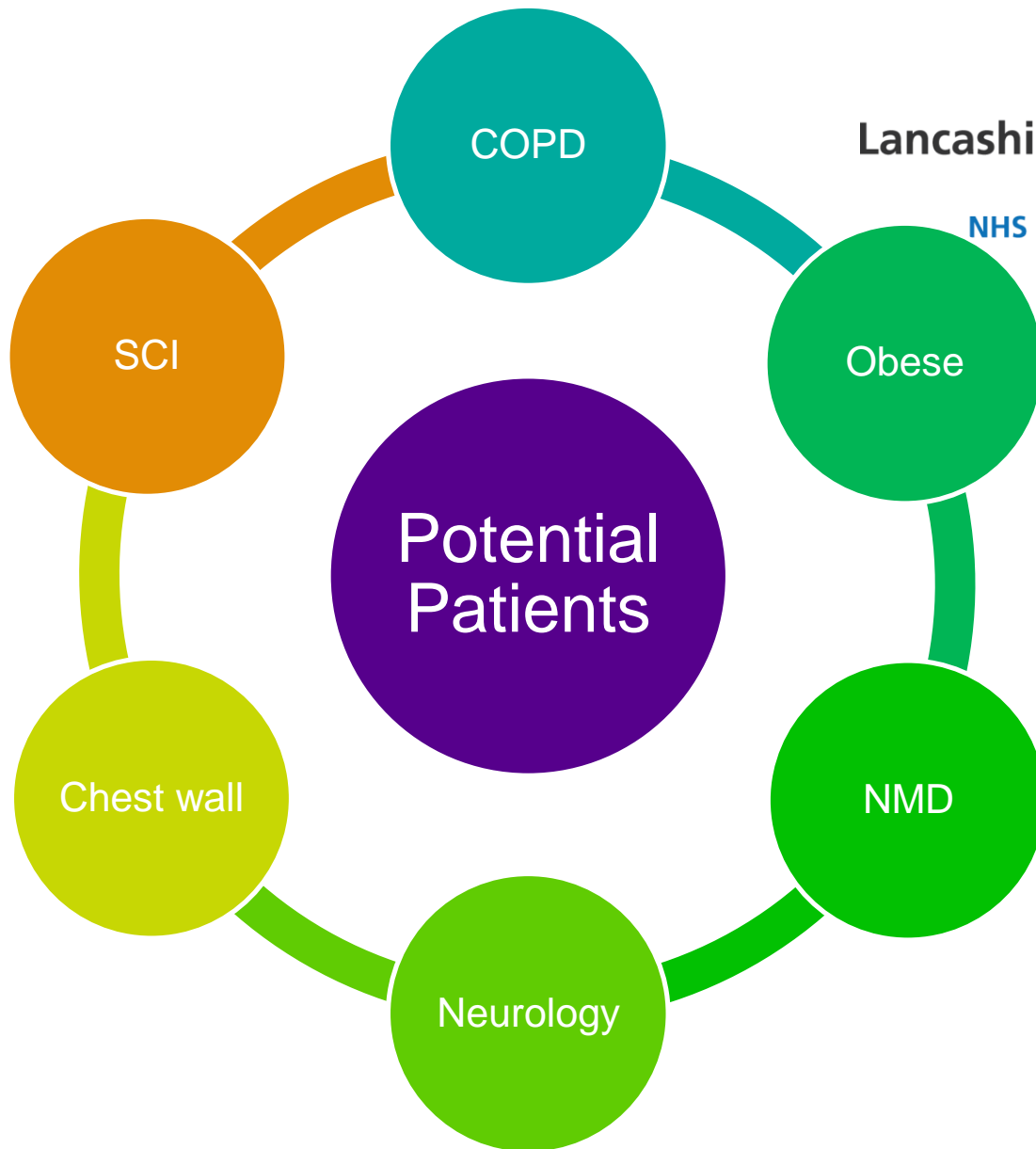


Sort the soggy lungs out

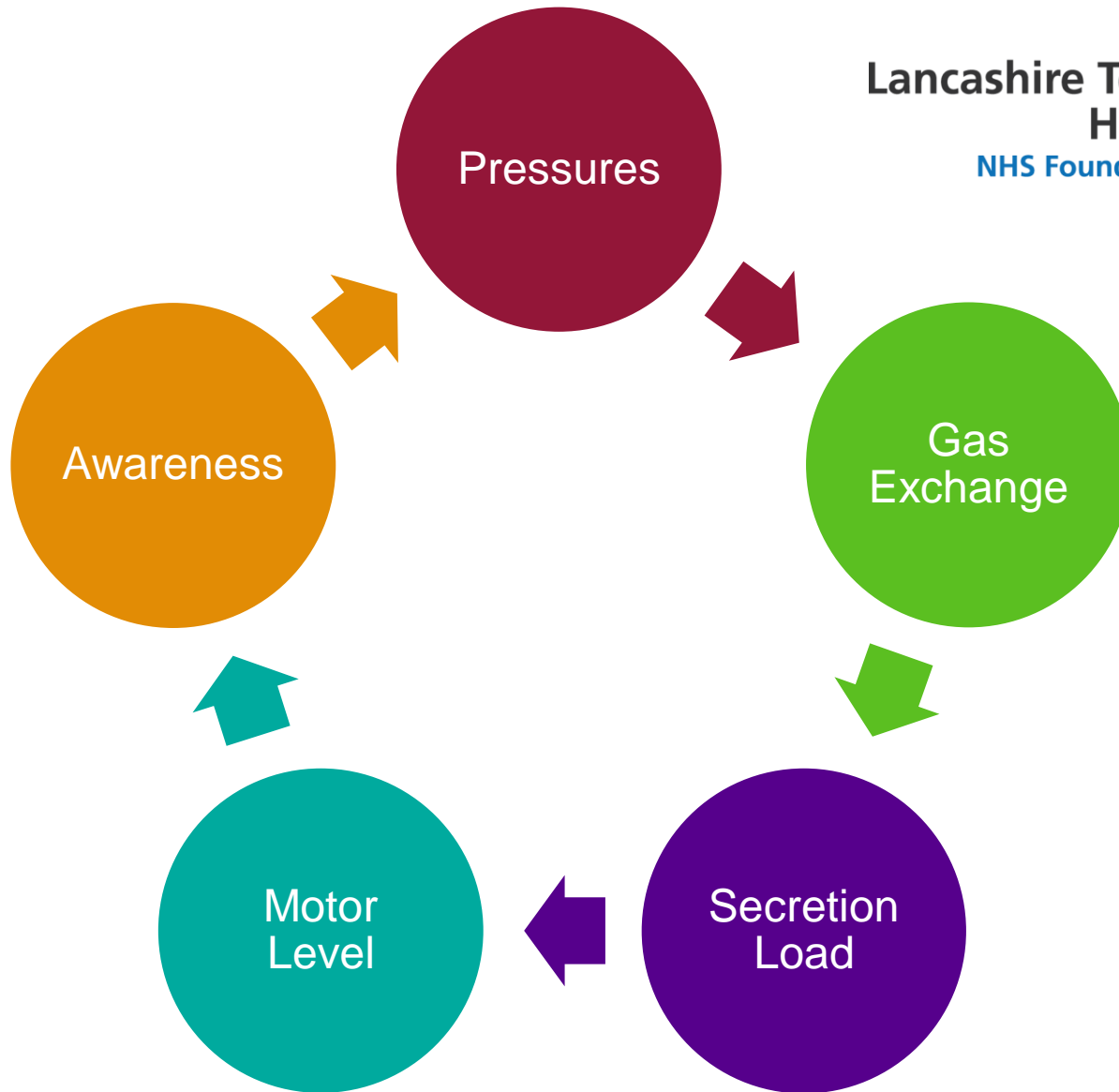
Normal pH, Normal RR
Resolution of primary factors



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Take Home Messages:

- ❖ There is loads of evidence for the use of NIV in the ICU
- ❖ However it is underutilised
- ❖ It takes as much skill to use effectively as invasive ventilation
- ❖ The airway is precious: We need to think about our use of tracheostomies and prolonged intubation
- ❖ SLTs need to become mandatory clinicians for all ICU teams
- ❖ Challenge current practice and evolve



Article Hyperlinks

Bott Study: [https://www.thelancet.com/journals/lancet/article/PII0140-6736\(93\)90696-E/fulltext](https://www.thelancet.com/journals/lancet/article/PII0140-6736(93)90696-E/fulltext)

Plant Study: [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(00\)02323-0/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(00)02323-0/fulltext)

Nava Study: <https://annals.org/aim/article-abstract/711364/noninvasive-mechanical-ventilation-weaning-patients-respiratory-failure-due-chronic-obstructive?volume=128&issue=9&page=721>

Burns Study: <https://www.bmj.com/content/bmj/338/bmj.b1574.full.pdf>

Breathe Study: <https://jamanetwork.com/journals/jama/fullarticle/2708258>

BTS/ICS NIV Guidelines: https://thorax.bmj.com/content/71/Suppl_2/ii1



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70
YEARS
OF THE NHS
1948 - 2018

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