

Correction

Davidson AC, Banham S, Elliott M, *et al.* BTS/ICS guideline for the ventilatory management of acute hypercapnic respiratory failure in adults. *Thorax* 2016;71 Suppl 2:ii1–35. doi: 10.1136/thoraxjnl-2015–208209.

The British Thoracic Society wishes to clarify reference to the definition of hypercapnia in relation to the BTS/ICS Guidelines for the ventilatory management of acute hypercapnic respiratory failure (2016).

The British Thoracic Society recognises the definition of hypercapnia as a PaCO₂ ≥6 kPa as used in the BTS Standards of Care document on non invasive ventilation in acute respiratory failure¹ and BTS Guidelines for Emergency Oxygen Use in Adults.⁶²

Previous guidelines recommended that NIV be considered if pH <7.35 and PaCO₂ >6 kPa and RR >23 breaths/min. These were predominantly written for patients with exacerbations of Chronic Obstructive Pulmonary Disease.⁴⁸ NIV use in the UK has since broadened to treat a number of other diagnoses where the evidence for benefit is less robust and where sometimes there is a mixed metabolic and respiratory acidosis.

In the 2016 BTS/ICS Guidelines for the ventilatory management of acute hypercapnic respiratory failure, the guideline development group considered that in patients with type 2 respiratory failure, a PaCO₂ between 6.0 and 6.5 kPa is unlikely to make a large contribution to acidosis. Consensus within the guideline development group and open consultation on the draft guidelines suggested that these patients should receive optimal medical care and controlled flow oxygen while NIV is considered.

The convention and guidance in many centres has evolved to limit the widespread use of NIV in acidosis with a large metabolic contribution and to initiate NIV only in those patients where repeat arterial blood gas measurement confirms a persisting respiratory acidosis pH <7.35 with a higher threshold for PaCO₂ >6.5 kPa.

The BTS/ICS Guidelines for the ventilatory management of acute hypercapnic respiratory failure recommendation 25 is amended to:

NIV should be started when a pH <7.35, a PaCO₂ of ≥6.5 kPa and RR >23 breaths/mins persists or develops after an hour of optimal medical therapy. (Grade A)

For patients with a PaCO₂ between 6.0 and 6.5 kPa NIV should be considered.(Grade D).

The following corrections are also noted:

Page 6 - Definition of AHRF:

“Conventionally a pH <7.35 and a PCO₂ >6.0kPa confirms acute respiratory acidosis and, when persisting after initial medical therapy, have been used as threshold values for considering the use of non-invasive ventilation.”

Page 16:

“In around 20% of AHRF cases secondary to AECOPD, optimised medical therapy, which includes targeting an oxygen saturation to 88–92%, will result in normalisation of arterial pH.^{2 62} Established guidance is to await improvement and initiate NIV if, after 60 min, the following are present: pH <7.35, pCO₂ >6.0 kPa and RR >23 breaths/min.^{1 48}

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REFERENCES

- 1 British Thoracic Society Standards of Care Committee. Non-invasive ventilation in acute respiratory failure. *Thorax* 2002;57:192–211.
- 2 Plant PK, Owen J, Elliott MW. One year period prevalence study of respiratory acidosis in acute exacerbation of COPD; implications for the provision of non-invasive ventilation and oxygen administration. *Thorax* 2000;55:550–4.
- 48 NICE clinical guidance [CG12]. *Chronic obstructive pulmonary disease - Management of chronic obstructive pulmonary disease in adults in primary and secondary care*. 2004. <http://www.nice.org.uk/guidance/cg12>
- 62 O’Driscoll BR, Howard LS, Davison AG, *et al.* BTS guideline for emergency oxygen use in adult patients. *Thorax* 2008;63: (Suppl_6):vi1–68.

