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LETTER TO THE EDITOR

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Need for international standardization of home oxygen therapy in children

A recently published clinical practice guideline from the American Thoracic Society (ATS) established standards and provided recommendations for home oxygen therapy (HOT) for children in the United States (US).[1] With no previous benchmark for HOT in pediatric patients with respiratory conditions in the US, the expert panel developed a document highlighting important differences between adults and children. Qualifying for HOT by Centers for Medicare and Medicaid Services (CMS) is based on research performed 35 years ago that found a reduction in mortality in adults with chronic obstructive pulmonary disease receiving HOT. Children were not included in that research, but in the US they are required to meet the same criteria, despite the lack of appropriate representation, although this is no longer the case in the United Kingdom (UK).

The expert panel convened by the ATS built upon the British Thoracic Society (BTS) standards document on HOT published in the UK a decade earlier.[2] The recommendations from both documents were similar due to a lack of high-quality evidence that persisted over the 10-year time span. The few studies that were selected during the systematic review provided very low-quality evidence; therefore, nonsystematic clinical observations (ie, clinical experience) were used to inform the recommendations. Acquiring higher level of evidence that would compare HOT to no HOT in children is not feasible as it would be ethically problematic regardless of country of origin.

These systematic reviews established normal oxyhemoglobin saturation values for children. In the ATS document, hypoxemia was defined as SpO2 of 90% or less in children younger than 1 year and SpO2 of 93% or less in children aged 1 year or older, in 5% of the recorded time or in three independent measures over at least 2 weeks.[1] These parameters for SpO2 defining hypoxemia in children were similar to the BTS document.[2] No published report exists, but we believe that children in the UK receive HOT according to the BTS document; although neonatologists there often maintain infants at home flows as low as 0.02-0.05 L/min, whereas the BTS guidelines suggest considering withdrawal into room air once the child reaches 0.1 L/min. The problem facing children in the US is discordance of CMS criteria for HOT and the definition and standards of hypoxemia for a child according to two high-quality systematic reviews of the pediatric literature that informed these guidelines. Nonetheless, there needs to be standardization in providing HOT to children to optimize the care of children with respiratory conditions on a global perspective.

The manuscript represents original work that is not being considered or has been accepted for publication elsewhere. IRB approval was not required for this work.

CONFLICT OF INTERESTS

The authors declare that there are no conflict of interests.

AUTHOR CONTRIBUTION

Conception and design, drafting of the manuscript: DH. Conception and design, revision of the manuscript: KCW. Conception and design, revision of the manuscript: IMBL.

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