Pediatric RESEARCH

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COMMENT

Bronchopulmonary dysplasia or chronic lung disease: an appeal to standardize nomenclature

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Authors tend to use the nomenclature bronchopulmonary dysplasia (BPD) interchangeably with chronic lung disease (CLD). We propose that the preferred term be BPD and explain the rationale for the same in the attached commentary.

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Bronchopulmonary dysplasia (BPD) was first used in the seminal report by Northway et al. in 1967.[1] In that report,[1] the authors opted to use the terminology BPD, so as "to emphasize the involvement of all the tissues in the lung of the pathologic process." We would like to suggest that the term BPD is the most appropriate and valid terminology to use even in the current era.

Although the criteria to define BPD are still evolving,[2,3] the term BPD highlights the underlying pathophysiology involving not just lung parenchyma (alveoli, vasculature, etc.) but also the large and small airways in this condition that is unique to premature infants.[4,5]

It is clear that BPD is a chronic condition. There is sufficient evidence that the impact of this condition extends into childhood and adulthood.[4,5] Experimental data strongly support the concept of injury to the developing lung resulting in permanent damage to mature lungs.[6–8] Emerging data raise concerns that BPD can evolve into chronic obstructive pulmonary disease (COPD) or adult respiratory distress syndrome (ARDS), especially if there is a second injury (for example, smoking or sepsis).[9,10] Clearly, for infants with BPD, the residual effects are long lasting, and a well-defined transitional stage toward adult chronic lung disease has yet to be elucidated.

Our understanding of the pathogenesis of BPD, and potential factors that may mitigate the injury continue to improve. It is now recognized that there is an element of genetic vulnerability. As tinier and less mature preterm infants are rescued by life-saving advanced technologies with a focus on minimizing toxic environmental exposures (e.g., hyperoxia, invasive ventilation), there has been an evolution in the disease that has led to the use of the term "new" BPD.[11] The pathophysiology is somewhat different from that of "old" BPD, but the essence of involvement of all tissues of the lung remains the same.[12]

Chronic lung disease (CLD), even if qualified by adding "prematurity" or "infancy", does not paint the full picture. Authors tend to use the terminology interchangeably or concurrently,[13–15] but also as a stand-alone term.[16,17] While use of the word "chronic" is important, this nomenclature does not provide any insight to the specificity of the target population, how the disease is initiated, how it becomes persistent[18] or the breadth of involvement of the lung. Furthermore, there are multiple other diseases that can be initiated *in utero,* propagated after birth, and persist as a chronic condition into child-/adult- hood such as disorders of surfactant metabolism, cystic fibrosis, and interstitial lung disease.[19] Thus, there is a need for a distinction to be made between BPD (which does become "chronic") and other CLDs with distinct pathophysiology that begin before or soon after birth and continue to plague the health of children, and in some case, adults.

Hence, we propose that the preferred and only terminology be BPD (with an appropriate definition), that can inform us of the unique pathogenesis of the condition. Adopting a consistent terminology (and definition) will aid researchers in identifying relevant articles efficiently so that studies can be evaluated both in experimental models and humans. Research in BPD is accelerating with the advent of novel therapeutic strategies to ameliorate this devastating condition.[20,21] The chronicity of this condition should spur research toward prevention that will not only improve the lives of babies, but may substantially decrease healthcare costs.[20,21]

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ADDITIONAL INFORMATION

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