

Early childhood asthma

WHILE WE HAVE LEARNT MUCH of the molecular and immunological basis of childhood asthma and treatment has changed dramatically, the impact on lifestyle, especially in early childhood, has not moved forward as rapidly. This is predominantly due to the difficulty of collecting objective data on the very young. To understand the causes of asthma and improve outcomes, with particular emphasis on primary prevention, it is important to clarify what we do know and what we need to know. On 7–9 February 2002, a group of people involved in paediatric asthma research and health-care around Australia met with an invited specialist from Canada to discuss and debate the topic “Early childhood asthma: what do we know and what do we need to know?”.

The objective of the colloquium was to formulate the key questions that should be directing our research over the next five years to gain a better understanding of asthma and other causes of wheeze in infants and toddlers. The colloquium was a joint venture of Asthma Australia and the Macquarie Bank. It was funded entirely by the Macquarie Bank Foundation’s “Asthma Australia Research Alliance”.

Clearly, there is a great deal of evidence that we need to gather in relation to early childhood asthma. The important areas for further investigation are the “Six Ps”.

Phenotype

There are many patterns of asthma in early childhood. Are they the same or different conditions? What is the relationship between genotypes and phenotypes? A better description of transient childhood wheeze is needed. An algorithm for early diagnosis should be developed.

Pathogenesis

The causes of wheeze and cough in young children are still not well understood. Are the changes seen in the airway of adults with asthma present in early life? The immunological models for asthma need to be developed further.

Physiology

Few tools have been available to measure what is happening in the airway and lungs of young children, and the implications of much that we can measure are uncertain. New tools, such as improved lung function measurement techniques and high resolution imaging, may help.

Pharmacogenetics

We need to define the medications, doses and preparations that should be used, and to determine at what stage and to which groups of children they should be given. Future pharmacotherapy is likely to be directed according to specific genotypic/phenotypic characteristics. Better devices, new approaches and dose–response curves need to be developed and trialled.

Prevention

While avoidance and other interventions may have an impact on the development of allergic sensitisation (atopy), there is still no effective primary prevention. Why does exposure to allergens and/or infections at different stages of life and the disease have different outcomes?

Public message

A lack of clarity in understanding early childhood asthma will result in healthcare providers and the public receiving mixed messages. Consensus on what we do know is essential for better understanding and more effective adherence to treatment. Principles of adherence must be dynamic and flexible.

Conclusion

The consensus about our knowledge of early childhood asthma and the directions for future research raised in the colloquium should contribute to better outcomes for the children of today and the prospect of markedly reduced asthma morbidity and mortality in the future.

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