

EDITORIAL

CORTICOSTEROIDS FOR ASTHMA – ARE THEY APPROPRIATELY USED?



The pioneers of medicine had documented the inflammatory nature of asthma by the turn of the last century. However, we then appeared to move into a time warp as physicians focused on bronchospasm for many decades. The re-awakening saw renewed focus on inflammation and entrenched glucocorticosteroids as the mainstay of asthma therapy. This happened on the heels of the development of evidence-based medicine, where landmark studies allowed us to appreciate the many benefits of corticosteroids (CS) in achieving the parameters of asthma control – both in the laboratory and clinically.¹⁻⁸

I chose to focus on the glucocorticosteroid receptor (GR) in this issue since CS are valuable agents in the arena of the allergologist. I felt it equally prudent to address some of the controversies surrounding CS in paediatric asthma (reviewed in this issue) and to encourage debate on precisely what is meant by 'complete asthma control'.

One should bear in mind that in achieving asthma control clinicians tend to operate on a symptom level; there is ample evidence that at tissue level, components of inflammation are controlled to a variable degree, i.e. we do not attain 'pathological control' with doses of CS used clinically.⁹ The importance of early anti-inflammatory therapy cannot be underestimated; in a group of steroid-naïve asthmatics, delayed treatment resulted in poorer lung function improvement among those with a longer duration of symptoms.¹⁰ When the reduction of bronchial hyperresponsiveness is used as an index of control, one must remember that this takes many months¹¹ and requires a much higher dose of CS than used to control symptoms alone. One such study demonstrated better lung function, histopathology and a reduced exacerbation rate with this strategy.¹²

Despite the plethora of research, many questions remain. Why is there incomplete attenuation of the inflammatory response, what is the basis for difficult-to-control asthma, what are the mechanisms for synergy in combination inhalers?

In my article on the GR, I've focused particularly on a molecular level because in the context of asthma it is an opportunity to delve beyond the clinical level. As respiratory physicians we have a unique opportunity to 'see' what is happening at a cellular level. There are many barriers to asthma control – clinical, e.g. environmental allergen reduction, and logistic, e.g. proper inhaler use. Even when all these have been surpassed the problem may be beyond you or the patient – the answers lie at molecular level. Molecular biology has been particularly fascinating for me for a variety of reasons. I'm intrigued by the 'economy of complexity': the DNA-binding domain is highly conserved among all steroid hormones, the ligand-binding domain confers specificity, and cytokines with similar effects share the same subunits of different receptors, etc.

Understanding GR interactions will not only give us insight into asthma but a host of other conditions where CS are used, and when sensitivity to CS is altered, e.g. HIV, visceral obesity-related insulin resis-

tance associated with components of the metabolic syndrome, etc. Additionally, the ability to abrogate the inflammatory cascade more efficiently or with safer non-steroidal modalities would be ultimate goals.

Finally, the real answers to cure or significant influence on the course of asthma lie in research which is still at an early stage.¹³ Until new results are available, an improved understanding of the pathophysiology of asthma and more efficient use of therapeutic agents will help paediatricians improve their patients' health and enable physicians to better contend with the legacy of asthma.

Also included in this issue are an interesting case presentation of vocal cord dysfunction complicating asthma, a review of recent findings on the role of pre- and probiotics in allergy prevention and a short report of patient assessment of the efficacy of immunotherapy.

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