CONCERNS & CONTROVERSIES IN ASTHMA

Dr Saville Furman interviews Dr Jeff Williams

Dr Furman: Are there any diagnostic concerns that you think general practitioners should bear in mind in the recognition of asthma?

Dr Williams: We live in an era now where asthma is on everybody's lips in informed societies and that brings with it its own problems. Some time ago a diagnosis of asthma was thought to be a ghastly business and people thought of their children as delicate and were very upset by it. These days we know that something up to 15% of children get asthma at some stage of their childhood, so it is very common.

This brings with it the first risk of over-diagnosis and certainly in the United Kingdom we are in an era where in some areas if you cough at night, you are diagnosed as having asthma and treatment is instituted and sometimes it is easy for people to forget that there are many other causes of night-time cough.

The old-fashioned principles of diagnosis should pertain and that means careful listening to the symptoms of largely cough and wheeze — although wheeze may not be as prominent as it is in adults. We should be able to demonstrate relief of those symptoms by short-acting beta 2 agonists and it may be that we are able to supplement that information showing not just relief but reversibility of respiratory function tests such as peak flow or FEV 1.

Diagnostic errors seem largely to err on the side of over-diagnosis rather than under-diagnosis. The exception is that in very small children and babies there is some reluctance to make the diagnosis because it commits you to prescribing medication. This is really a very difficult area, but we are at last getting some grasp of being able to differentiate between those children under two who simply have recurrent viral-triggered wheeze and cough and those children who have genuine asthma.

The key points to look out for to enable that differentiation to be made are as follows: firstly, a first-degree relative — particularly the mother — with asthma or other atopic disease; secondly, the presence of eczema in the first year of life; thirdly, rhinitis without obvious URTI; and fourthly, the wheeze and cough could be brought on by, for example, taking the child out in a pushchair on a cold or blustery day. Indeed, such symptoms could be a result of romping around on the carpet and getting allergies up their noses and they cough and sneeze because of that. In that case, you are looking for an allergic background which might enhance your ability to make the diagnosis.

Having said that, it is not always easy: sometimes one may have to assume that these children may have asthma and treat them accordingly and see what happens.

The number of children with very rare conditions that you may miss are few, and normal chest X-rays will usually help a diagnosis. Cystic-fibrosis patients usually present in the classic text-book fashion but may fool you because 25% of them have hyper-reactive airways and they can therefore occasionally present with asthma.

Congenital anomalies of the lung or inhaled foreign bodies and the like occasionally appear, but again, a chest X-ray will often exclude those if there is diagnostic concern in one's mind.

Sinusitis is quite uncommon in small children, but the older they are the more likely they are and it is quite difficult to diagnose without CT scanning.

Post-nasal drips I find very common indeed and I think they are a potent cause of night-time cough, which we must be careful not to diagnose as asthma.

Dr Furman: It is said that in the management of childhood asthma, the peak flow is of better value than the stethoscope for the family practitioner. Would you like to comment on this?

Dr Williams: I would be very surprised if anything is better than clinical judgement for general practitioners who are experienced, but peak flows have been widely hailed as very important. There have been a number of recommendations over the last several years, one of which was that every patient with asthma should have a peak flow meter to use at home.

I think that there is an increasing doubt as to whether this is a viable proposition for a number of reasons. First of all, do we really expect children to do peak flow twice a day every day for month after month and possibly year after year? It is totally unrealistic. They do not do it. At least, hardly any of them do it and they will eventually, if you persuade them enough, cheat. They will bring in their faked chart just like the diabetics do when they should have been doing the blood sugars twice a day.

The other aspect is that it is much more important to know what their gold standard

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best peak flow is when they are in good health rather than to compare peak flows with a notional range on a given chart that is offered. I actually think that FEV 1 is a better test than peak flow, but of course not everyone has the ability to measure FEV 1 because they don't have spirometers sophisticated enough to do so.

What my practice for children is, is to try to encourage them to use a peak flow meter correctly. I encourage them to do it maybe once a fortnight when they are extremely well and so establish their gold standard level in good health. The general practitioner and the child's mother can have some view as to the severity of the attack when they are seen during an acute episode.

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I further encourage them to do the peak flow twice a day regularly when they are not well. This allows the mother — and the child, if the child is old enough — to monitor the progress and assess response to short-acting beta 2 agonists given at home. This puts them in a position to alert their family doctor when things are not going so well. In this context it is quite nice to be able to say, "This is your gold standard. Below 80% of that level you should be taking regular short-acting beta 2 agonists, and if you can't keep it above 50% or 60% of your best level then you must ring me and ask for advice."

Dr Furman: When should we start steroids?

Dr Williams: I think there are a number of criteria that can be used for making a decision to institute inhaled steroid therapy, all of which represent some degree of poor control. Among these criteria are:

1. The daily or more frequent use of short-acting inhaled beta/agonists.
2. If there are issues about whether the patient has continuing exercise-induced symptoms. One of the important aspects is to try and assess whether or not they have exercise-induced symptoms, because they do not often declare it. Parents often suggest that the child prefers to watch television and isn't very active, or likes to play with the computer when actually this is hiding the fact that the child is unable to participate as well as he or she would wish.
3. Nocturnal symptoms and waking frequently. I think if they are waking two or three times a week or more, that certainly is an indication for considering prophylaxis.
4. If they are having acute episode of asthma, such that they need treatment, or even admission to hospital in more extreme cases.

These are, broadly, the criteria I would use to decide to start inhaled steroids.

Dr Furman: There has been a lot of hype about growth problems on steroids. Many parents have read in the lay press about osteoporosis and growth problems in children. Do you feel these side effects may influence our choice of steroids so early in the disease?

Dr Williams: I think that we have got enough emerging evidence now to make us much more confident about the use of inhaled steroids and to discuss this openly and prospectively with parents, because patients are quite informed about health issues these days.

First of all, we have to tread the tightrope between not prescribing adequate or appropriate treatment and allowing them to have symptoms and prescribing adequately.

There seems no doubt, now, that for many children inhaled steroids are a more effective treatment than the alternative, which is sodium chromoglycate. I wouldn't say that this means that there is no role for sodium chromoglycate, but I think there is a clear choice between the two and I think we are increasingly more confident about inhaled steroids.

The issue of growth is the key one for most parents in terms of any side effect profile it may have. I believe that we now have enough long-term studies, prospective studies over a year — at doses of inhaled steroids of 100ug a day for fluticazone and 200ug a day BDP and budesonide — to suggest that growth is unlikely to be affected.

Indeed, there is absolutely no evidence to suggest that there can be any effect on growth at that sort of dosage level. At that dose, steroids will still out-perform sodium chromoglycate.

The second aspect is that although we haven't got information for much bigger doses of inhaled steroids, we do have an important weapon in our repertoire and it is called measuring their height. Most paediatricians and many family doctors will measure children's height regularly and so if you have this behind you, you can see if a child's height is falling away. It gives a parent a great deal of encouragement if you say, "I understand your concerns, but I don't believe they are valid. What we will do together is monitor the growth very carefully and if you have any concerns about it we can discuss it again."

I also think it is important in this context to make sure that this subject is brought up for discussion straight away, rather than just hoping and not mentioning it.

Dr Furman: How long do we keep them on steroids? How do we know when to stop?

Dr Williams: In our previous national asthma guidelines in the UK we suggested 6-12 months, but we have had further thoughts about this. There is evidence that bronchial airway hyperactivity, which is something you

measure in the laboratory rather than in daily clinical practice, continues to improve, certainly up to about 18 months into treatment with inhaled steroids.

Now, this may not be the same as absolutely good clinical control, but it is a reasonable surrogate for it. I have changed my discussions with parents now, to suggest that when we start an inhaled course of corticosteroid therapy in childhood asthma, it may well need to go on for at least 12-18 months rather than my previous statement of 6-12 months.

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At each and every opportunity we should discuss progress, because otherwise I am afraid patients stop treatment without telling us, and that makes things much more complicated.

Dr Furman: Do you believe that there is still a role for theophyllins and, if so, at what stage should we introduce them? Is it really that necessary to monitor via blood tests?

Dr Williams: The use of theophyllins can be divided into two components. First of all, its use as a bronchodilator, and secondly, its use in the area that we are interested in at the moment, which is for its immuno-modulatory (anti-inflammatory) properties.

First of all, the bronchodilator property: there is no doubt that theophylline has got bronchodilating properties and we have used it as such for many years. The problem with it is that you need to keep the blood levels at a fairly prescriptive level of between 10-20mg per litre, ug per ml, and children metabolise it at such a variable rate. Certainly in smaller children, say under ten years of age, our own studies have shown that their blood levels are highly variable on a standard dose.

This means that to get the appropriate bronchodilator action you do need, unfortunately, to monitor levels either by assay of blood or assay of saliva, which is available in some places.

For this reason, we have relegated theophylline as a bronchodilator — or at least kept it in its same relegated position when we use it as additional therapy when the patients are already on high doses of inhaled corticosteroid, and added to that, long-acting inhaled beta 2 agonists (eg. Serevent, Foradil).

We are now more interested in the immuno-modulatory, anti-inflammatory properties of the theophylline which are evident at much lower plasma levels. This may mitigate the otherwise quite frequent side effects that you get with theophylline, particularly effects on the gastro-intestinal tract and on wakefulness and the like.

Using it at low levels means you don't have to do blood tests as well, so that is another advantage. I don't think this anti-inflammatory activity is anything nearly as satisfactory as inhaled steroids, for example, so it is not an alternative to steroids in my view.

I think that where we see it having a place now is as additional therapy to steroids and beta agonists, if that therapy is not successful. You add it on at low dose, minimising the side effects and getting rid of the need for plasma level monitoring.

Dr Furman: While on the subject of anti-inflammatory, the new buzz-word is "leucotriene antagonists". Do you feel they will have a role to play in paediatric asthma and do you have any personal experience with them?

Dr Williams: The second question first: No, I haven't used them and they are not yet licensed for use in childhood in the United Kingdom. Indeed, we have had no satisfactory clinical trials in children that I am aware of yet. It is a very interesting area for two reasons: firstly, it is oral, which may be very attractive to children who in other respects are disinclined or unable to use their inhalers. Secondly, the overall action of leucotriene antagonists is relatively mild. We would not expect it to be much more dramatic than that, because it is affecting one particular part of the inflammatory process, rather than having a sort of sweeping action like inhaled corticosteroids have.

I suspect, therefore, that if and when it finds its home in the management of paediatric asthma, it will be in the milder group. This will be very interesting and very exciting because it may be that, for those people who are concerned about steroids — rightly or wrongly — this may be an alternative for the mildly asthmatic child as oral therapy.

If that is unsuccessful, then maybe it will be the chance to go on to more formal anti-inflammatory treatment with inhaled steroids.

This is early days, and there is no evidence to support it, but that would be my guess as to what's going to happen.

Dr Furman: Do you have a final message for us?

Dr Williams: A final message, to tie up loose ends, is that asthma is increasing, people are much more aware of it and informed. I am sure the basic practice of listening to the story and examining the child carefully still works. They don't need fancy investigations a lot of the time.

We must be careful not to over-diagnose asthma and we must be careful to give patients reasoned and reasonable treatment.

The treatment is generally very safe indeed, and most countries now have guidelines which are there to help us rather than to act as a dictate which we must follow under all circumstances. ●