British Thoracic Society
Adult Asthma Audit 2012
(national audit period 1 September 2012 – 31 October 2012)

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INTRODUCTION

The 2012 British Thoracic Society Adult Asthma Audit was carried out over a two month period from 1st September 2012 to 31st October 2012. The audit has been carried out annually in its current form for several years, and focuses on hospital admissions with acute asthma, specifically looking at initial assessment, management and follow-up. It was contributed to by 118 institutions, and 2,484 submissions in total were received.

ASSESSMENT AT ADMISSION

As in the previous BTS adult asthma audits, a female preponderance was evident (69.0% of admissions), and the cause of this remains unclear, although a female preponderance is consistently seen in difficult-to-treat asthma patient cohorts and there may be a relationship between these observations[1, 2].

Readmission rates remain disappointingly high and relatively unchanged in audits over recent years. In the current audit, 7.5% of patients were admitted within a month of prior discharge, which is the same as the 2011 audit. An additional 8.2% of admissions had been discharged between 1 and 3 months previously. The majority – 65.4% – had either not had a previous admission or none within the last 12 months. Overall these figures seem relatively static over recent years and as readmission rates are a useful overall marker of quality of care, there remains a need to target those patients with recurrent short term readmissions with optimised patient education, the use of self-management plans, and good post-discharge follow-up.

Peak Expiratory Flow (PEF) was measured at initial assessment in 81% of cases, which again was the same figure obtained last year, whereas in 2010 this figure was 87%. Furthermore, only 38% of patients had a post-bronchodilator reading which again has not changed from the previous 2 years' audits. This test is a core variable in assessing the initial response of a patient with acute asthma to bronchodilator treatment, is very easy to perform and the result informs the decision to admit. It is disappointing that these figures have not improved and again further work in Accident & Emergency departments is needed such as standardised asthma assessment tools, which prompt the admitting clinician to carry out these readings prior to making a decision to discharge.

Oxygen saturation measurements were obtained in 96.1% of patients at admission. This is a reassuringly high figure, although it is surprising that it is not 100%, given that it is a standard assessment which can be easily performed, though this may be due to some data loss in documentation. Of those assessed, 16.3% of patients had oxygen saturations lower than 92% and of these, 71.21% went on to have arterial blood gas (ABG) analysis, which again is the same figure as 2011. The BTS/SIGN Guidelines recommend that all patients with acute asthma and oxygen saturations of less than 92% should have ABG analysis due to the increased risk of hypercapnoea in these patients, which is a feature of life-threatening asthma[3]. It is of concern that this shortfall has remained, as failing to carry out an ABG under these circumstances is a serious omission. Again, standardised asthma admission tools may improve the uptake of these important aspects of assessment. Interestingly, of those who had an ABG on account of low oxygen saturations, 11.9% had evidence of hypercapnoea (17.2% in 2011), but it suggests that relatively small numbers are presenting in hypercapnoeic ventilatory failure, possibly due to earlier presentation, better patient education, or more rapid and efficient assessment and treatment.

Smoking status was incorporated into the audit in 2011, and the figures this year are, perhaps

unsurprisingly, much the same. Of those admitted, 33.1% of patients were current smokers, and a further 17.3% were ex-smokers. Around 20% of adults in the United Kingdom smoke cigarettes[4] and the worldwide prevalence of cigarette smoking in asthmatics is estimated to be between 20 and 35%[5]. The audit figure is towards the upper limit of this estimate. Cigarette smoking in mild to moderate asthmatics has been shown to increase frequency of hospital admissions as well as to create relative corticosteroid resistance which may explain why a third of patients admitted were current smokers[6]. It is worth noting also that 8.2% of patients did not have a smoking history documented, which is a significant omission, as this is an important aspect of the respiratory history and an opportunity to provide smoking cessation advice.

MANAGEMENT IN HOSPITAL

The time point at which patients were treated with systemic steroids following presentation is unchanged from the last year's audit (Fig. 1). 40% of patients received systemic steroids within the first hour of arrival at hospital suggesting that they were triaged, assessed and managed efficiently. A further 10% had received steroids already from the GP within the 6 hours prior to presentation. However, 12% received them after 4 hours and a further 2% did not receive them until after 24 hours following presentation. Again, it may be that the over 24 hours figure of 2% is due in part to a problem with documentation, e.g. that the GP had already given them but this had not been recorded in the notes and no further doses were prescribed until the next day, but it is also possible that systemic steroids are prescribed on the admission drug chart for the following morning. Systemic steroids take several hours to exert their anti-inflammatory effect, and therefore prompt administration after presentation is important.

Pre-discharge peak flow was performed in 79.1% of patients had which is similar to previous audits, though again, it is disappointing that this has not improved. Give the issue about readmission and that patients with a PEF of less than 75% of personal best or predicted at discharge are more likely to be readmitted[3] , this may an area worth targeting to improve the high readmission rate noted earlier.

Pre-discharge peak flow variability was measured in 75.0% of patients and average variability was recorded at 19.48%. Variability less than 25% is thought to indicate good control, and again has been shown to reduce the likelihood of readmission[3].

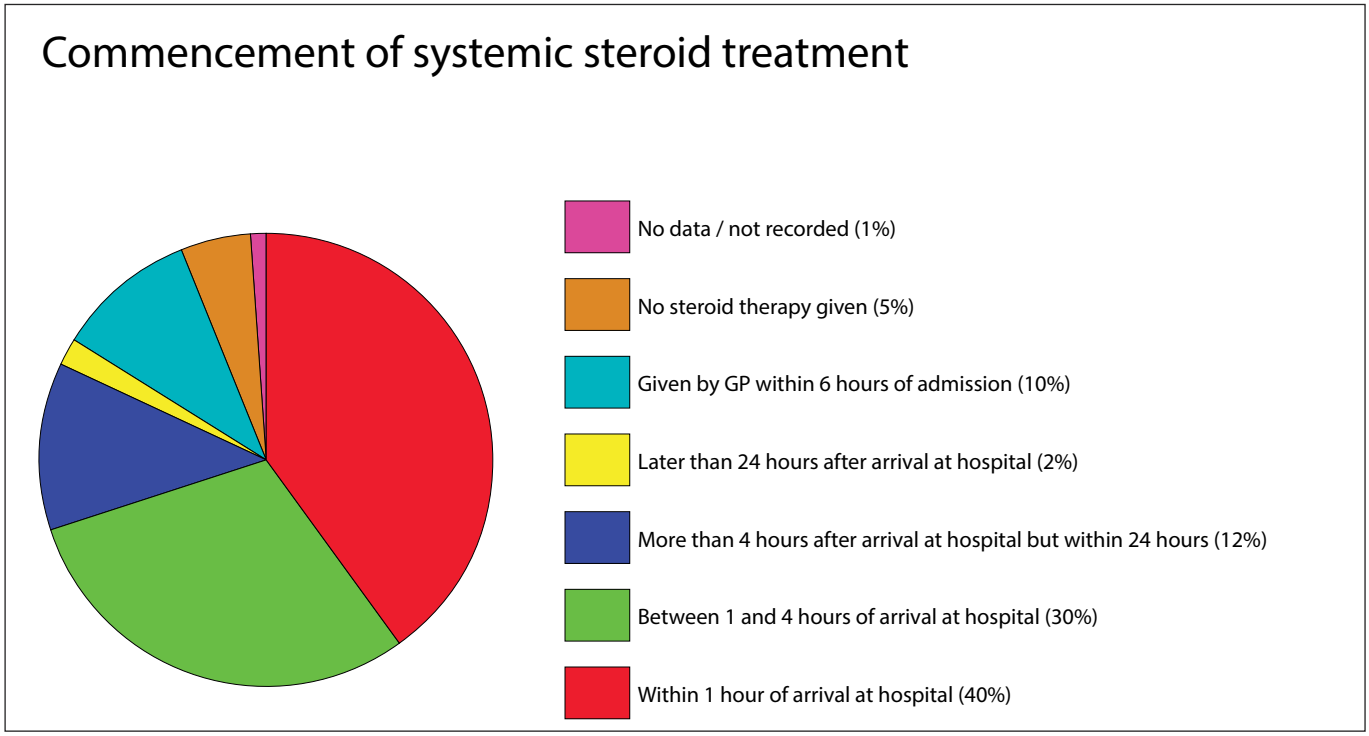

Fig.1 – The time from presentation at which systemic steroid treatment was administered.

DISCHARGE FROM HOSPITAL

Of those admitted to hospital, 8.5% were new diagnoses of asthma, which is unchanged from 2011. Of concern, 20.4% of these newly-diagnosed asthmatics were discharged without having been commenced on inhaled corticosteroid therapy, which represents a slight increase from the previous year, when the figure was 17.9%. Furthermore, 30.1% of known asthmatics who were receiving beta-2 agonist therapy only prior to admission were not commenced on inhaled corticosteroids at discharge. This is an area of concern, specifically that large numbers of patients who have presented with acute asthma are not being discharged on the appropriate anti-inflammatory treatment and again this may be an area worth targeting to try and reduce readmissions.
8.9% of patients were judged to be non-adherent to asthma treatment which is unchanged from last year. This is likely to be a significant underestimate. Patient self-report is known to give an overestimation and other measures, such as prescription records, should be used in a more systematic manner to reliably identify and target adherence[7, 8]. Of those felt to be non-adherent, 78.3% of patients had the reasons for poor adherence discussed with them and addressed, which is a slight increase from the 2011 audit (73.4% of patients). It is not clear exactly how reasons for non-adherence were specifically addressed in each case, but it is an important step as regular use of inhaled corticosteroids has been shown to reduce asthma-related hospital admissions and readmissions in patients across all grades of severity[9].

Only 48.6% of patients had their inhaler technique reviewed, although again this is a small improvement from the 2011 audit, when 44.9% of patients had a technique review. This is disappointing, especially as 25.6% of patients were found to have poor technique, but subsequently improved, and a further 6.8% required a change in inhaler due to persistently poor technique with their current device. Better documentation is needed in this area, as 30.1% had no data recorded for this intervention.

A clinic review appointment was scheduled in 66.8% of patients within 4 weeks of discharge , which is unchanged from the 2011 audit. There was an improvement however in the percentage of patients with a written record of advice to see their GP within a week of discharge – 42.6% in this audit, compared with 37.2% in 2011.

Only 42.2% of patients were recorded as having been issued with a written action plan, which is similar to the 2011 audit result. By ensuring that a written action plan is issued or reviewed prior to discharge, the patient is better equipped to respond appropriately to a further exacerbation.

Since the results of the 2011 audit, 22 institutions have increased their respiratory specialist nurse involvement with asthmatics admitted to hospital. A further 13 institutions have developed specific asthma admission proformas or checklists to ensure that guideline-driven assessment and management is optimised, 11 institutions have started to use a written personal action plan, or are using it more regularly. Following the 2011 audit, 13 institutions had specific educational events for healthcare staff working with asthmatic in patients.

CONCLUSION

In spite of the positive steps taken by some institutions following the 2011 audit, the results of the 2012 adult asthma audit are broadly unchanged and further improvement could be made in a number of areas. The audit is useful as it highlights a number of problem areas that could potentially be easily addressed to improve outcomes, specifically peak flow monitoring, use of written action plans, ensuring patients are receiving inhaled corticosteroid therapy prior to discharge and checking of inhaler technique. Targeting these areas is likely to reduce the high readmission rate that has remained unchanged for the last few years.

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