



British Thoracic Society
Adult Asthma Audit Report 2011
(Audit Period – 1 September 2011 -31 October 2011)
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Introduction

This audit looks at hospital admissions due to asthma and builds on the information from similar audits in previous years. Responses were received from 114 hospitals in 100 different trusts; there were 2093 submissions in total. This is a larger number from 2010 when there were 87 hospitals and 1932 submissions. The audit looks at the admission assessment and subsequent management in hospital, discharge and follow-up.

Assessment at admission

In the 2011 audit, 69.4% of patients admitted were female. This female preponderance has been the observed pattern in previous audits, and is similar to the 2010 audit (68.4%). Difficult-to-manage asthma tends to have a female preponderance^{1,2}, and the gender difference in this audit may be a manifestation of this, although the precise reason cannot be identified.

Disappointingly, there remains a high readmission rate, which has remained relatively static in recent years. The audit reveals that 9.5% of admissions were readmissions within 1 month, which represents a rise from 7.4% in 2010. There was also a rise in the number of those readmitted between 3 and 12 months after original discharge: 15.10% in 2011 compared with 12.32 % in 2010. Patients who had not been admitted in the previous year and those who had never been admitted totalled 60.5%, a fall from 66.7% in 2010. The overall picture remains disappointing, given the strong evidence base for asthma action plans with resultant avoidance of hospital admission, and further focus is necessary on this specific issue.

As with previous audits, initial assessment remains sub-optimal and in the current audit, there was a further disappointing fall in the number of peak expiratory flow (PEF) measurements being carried out at presentation. This seems surprising given that it is a simple but key method of stratifying severity and treatment plan (81.4% of admissions had PEF observed in 2011, compared with 86.2% in the previous year and 87.4% in 2009). There was a fall in peak flow observations recorded post-bronchodilator: 36.6% compared with 39.3% in 2010 and again this is disappointing as this is also a fundamental step in initial management, specifically informing the decision to admit to hospital.

Oxygen saturation was documented in 96.2%, compared with 97.5% in 2010. Although this is a reassuringly high figure, it seems disappointing that it does not hit 100%, given the ease with which it is measured – this may relate to documentation. Interestingly, there were fewer patients with oxygen saturations less than 92% on air in the 2011 audit (16.2% compared with 19.0% in 2010), but as before, there is concern that arterial blood gases were only performed on 72.0% of these patients (17.2% of these patients had hypercapnia). This is a BTS/SIGN Guideline recommendation³ and one can only speculate about why the low oxygen saturation does not trigger a blood gas measurement. Many of the concerning findings related to assessment have been consistent in recent years, and future audits should try and identify the reasons for some of these important deficiencies.

Smoking status has been incorporated into the 2011 audit. Interestingly, 32.5% of patients admitted to hospital were current smokers and a further 18.8% were ex-smokers. The British Heart Foundation Statistics Database reported the prevalence of current cigarette smoking in the UK to be 21% in 2008⁴, so a significantly greater number of asthmatics reported themselves to be smokers over the general population data. The prevalence of cigarette smoking amongst adult asthmatics in the UK and USA has been cited to be between 17% and 35%⁵, so the figure from the audit is at the upper end of this estimation. There is evidence that smoking causes steroid resistance in asthma^{5,6} and it may also be that smoking is associated with other 'risk' behaviours, which may make this group more likely to be admitted to hospital.

Management in hospital

Systemic steroids take some time to work, thus early administration is central to all acute asthma management guidelines^{3,7,8}. They were initiated within one hour of arrival at hospital in 39% of cases, unchanged from 2010 and in a further 7% they had been commenced by their GP in the preceding six hours (Figure 1). A small number of subjects consistently do not receive them, (5% in 2011 and 3% in 2010). This is unlikely to be due to failure of documentation, as the audit has a section for "No Data / Not Recorded" (2% of patients), therefore implying an active omission of steroids, which may be due to patient choice.

Discharge from Hospital

Discharge peak flow was documented in 81.3% of patients, which is similar to previous audits, and again it is difficult to draw conclusions about why ca 20% of patients are not having this carried out.

Asthma was newly diagnosed in 168 patients (8%) which is relatively unchanged from 2010. However, of concern, 17.9% of these were discharged without inhaled corticosteroids, which again has consistently been identified in previous audits (22.2% in 2010). Again, the audit does not identify why almost one fifth of these new cases are not being started on appropriate treatment; it would be important to explore this in future audits.

Non-adherence with medication was deemed to be present in 9% of cases, which is the same as 2010. This is very likely to be a gross underestimation – non-adherence is poorly identified by clinicians and poorly reported by patients unless objective measures are

utilised and is associated with admission to hospital^{9,10}. It seems likely that a more systematic approach to non-adherence would identify the true prevalence and allow it to be targeted at the time of admission.

Approximately a quarter (25.7%) of admissions had a step-up in their maintenance treatment prior to discharge, although it is difficult to interpret the appropriateness of this intervention.

Only 44.9% of these patients had documented evidence of inhaler technique review, with a further 35.2% of "No data/Not recorded" (Figure 2). This figure is disappointing, particularly since it is also noted that of the 927 patients who had their technique assessed, a quarter (23.19%) were found to have poor technique which improved with education. Given that their poor inhaler technique is likely to have been a key factor in relation to the exacerbation, the necessity of such assessments is important. A further 7.12% of patients needed a change of inhaler on the grounds of their inhaler technique.

Follow-up plans for patients in this audit are very similar to those obtained in previous reports (Figure 3); 68.6% had a review in hospital planned within the four weeks following discharge and only 37.2% were advised to attend their GP within 7 days of discharge. An admission with asthma represents an opportunity to review the reason for the admission and put in place an action plan for future events. Disappointingly, only 41% had a written action plan on discharge suggesting this important opportunity is being missed in the majority of patients. More widespread implementation of action plans and review of inhaler technique are likely to have a significant impact on readmission rate and clearly more work is needed in this area.

Conclusion

The 2011 BTS audit, as in previous years, gives a revealing insight into the acute management of asthma throughout the UK, and highlights a number of deficiencies, which disappointingly have been consistently identified in recent years. Plans should be put in place to address deficiencies in implementation of action plans and inhaler technique and medication adherence. Smoking asthmatics need to be specifically targeted and educated, given that 33% of all admissions were current smokers. Future audits should be more ambitious and try and identify why some of the deficiencies are occurring to allow strategies to address these in the future.

References

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Figure 1 – Timing of administration of first dose of systemic corticosteroid

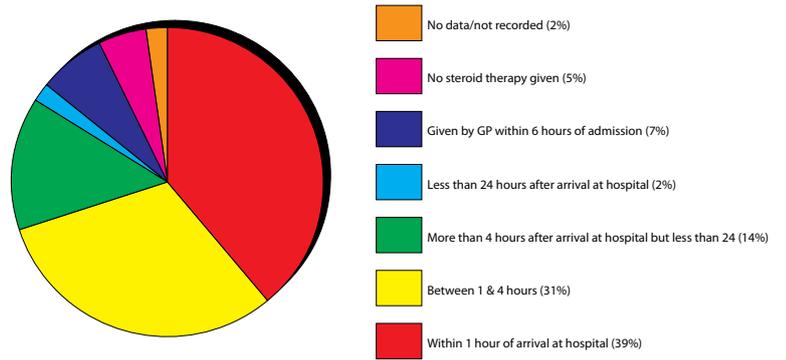


Figure 2 – Results of inhaler technique check (only 45% of patients with observations)

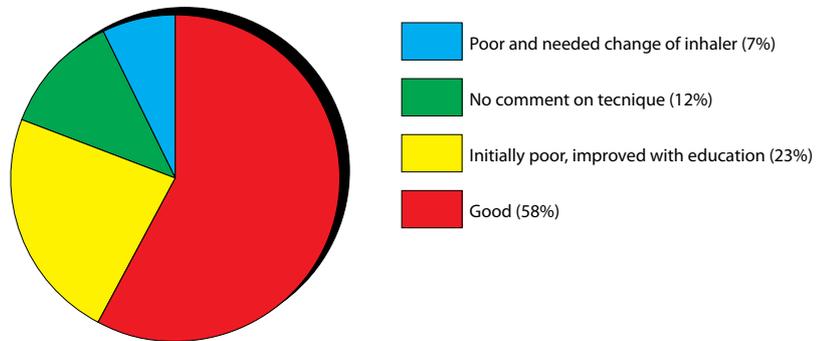


Figure 3 – Follow-up arrangements

