Severe asthma patient identification, review, and referral; a Joint Working project between Hull University Teaching Hospitals NHS Trust and GSK in Humber and North Yorkshire Integrated Care System (ICS), the UNITE Service

Authors: Shoaib Faruqi[1] Thomas Ruddy[2], Gemma Barry[2], Helena Cummings[1] and Michael G Crooks[1,3]

[1] Hull University Teaching Hospitals NHS Trust [2] GSK UK [3] Hull York Medical School, University of Hull

Background and Aims

According to an Asthma UK report: Severe asthma – Unmet need and global challenge (2017)[1] , around 200,000-250,000 people in the UK have severe asthma, which may be under recognised in primary care. Patients could benefit from a more systematic assessment in primary care and possible specialist referral.[2] In well selected severe asthma patients newer biological therapies decrease asthma exacerbations by over half and may have a "life-changing" effect in some. Potentially many severe asthma patients, who may benefit from treatment with a biologic, are not referred into specialist care for assessment; it is estimated that over three quarters of asthma patients eligible for these drugs haven't been assessed for the same.[1]

The aim of this project was to determine if severe asthma patients could be identified in primary care; once identified, for standard asthma care to be optimised; and if asthma control remained sub-optimal referral, for assessment towards a trial of biological therapy.

Methods

1. Participating GP Practices within the HNY-ICS had a remote search run on their system to identify patients with asthma who were receiving ICS/LABA combination therapy and who had been prescribed either 3 or more courses of prednisolone in the past 12 months or maintenance prednisolone.
2. Patients identified from the search were invited for up to 3 virtual reviews by a Respiratory Specialist Nurse. Review were supported by use of a detailed clinical assessment template and referral criteria, developed in collaboration with the severe asthma service. Each review was allocated 45 minutes. The period between reviews, if more than one was required, was 4-8 weeks.
3. Patients whose asthma remained uncontrolled after virtual reviews were referred to the severe asthma service for ongoing management and biologic initiation if appropriate; the rest remained under the care of their GP Practice.

Patient feedback regarding the service was obtained on a numeric response score from 1 to 5.

Results

Outcome measure	Result
Practices engaged	55
Practices: remote search run	39
Participating Practices	35
Total patient volume	276,876
Total volume of asthma patients (From the 35 active practices)	17,396 (6.28% of total Practice population in active Practices)
Total no. of asthma patients invited for an assessment following case note review	435 (2.5% of total asthma population and 0.16% of total Practice population)
Total no. of patients receiving 1, 2 or 3 reviews (all virtual)	1 review: 331 of 435 invited attended (76%) 2 reviews: 203 (229 invited) 3 reviews: 74 (102 invited) Total reviews: 608
No. of reviews with an updated written asthma management plan (PAAP)	464 (of 608, 76.3%) New PAAP: 124 Updated: 340

Outcome measure	Result
No. of patients requiring a change of their treatment following nurse revie	Escalation of treatment: 188 patient reviews (31%) Maintained treatment with education: 441 patient reviews (68%) De-escalation of treatment: 9 patient reviews (1%)
No. of patients referred to the Hull Severe Asthma Clinic	38 (11.5% patients reviewed referred)
No. of patients requiring other intervention	Referrals to spirometry: 77 (41%) Referrals to smoking cessation: 38 (20%)
No. of patients attending the Severe Asthma Clinic after referral	38 patients identified from UNITE reviews for referral 28/31 attended a review 3 did not attend
Percentage of appropriate referrals versus protocol	100%
Progressed to biologics (so far)	13
Patient experience questionnaire score	4.85/5.00 (n=89)

Discussion

Our results suggest that it is feasible to identify patients with severe asthma in primary care by means of a remote search of electronic patient records. Criteria used to identify patients in this project were based on being eligible for a trial of treatment with biological therapies, rather than meeting definition of severe asthma. All the 435 patients identified, 2.5% of the total asthma population, met the criteria for a trial of treatment with biological therapies based on exacerbation frequency and asthma diagnosis.

The next step was to determine whether asthma care could be optimised by specialist nurse intervention by way of virtual clinic assessment, which comes with significant resource benefits. Optimisation of care was by the implementation of standard asthma care. Over three quarters of patients had an updated written personalised asthma action plan. Around a third of patients had their standard asthma treatment altered and the rest maintained on baseline treatment with education.

Following optimisation of treatment 38 patients (11.5% of patients reviewed , and less than 0.5% of the whole asthma population) were referred to the severe asthma service. Of these around half did actually progress to biologics. This suggests that the vast majority of asthma patients who otherwise meet criteria for biological therapies can be managed in primary care with appropriate review and treatment optimisation, potentially improving patient outcomes whilst optimising health-care resource use at the same time.

Although numbers progressing to biologics were not large, and much lower than what has been suggested, this project has highlighted several aspects which may help in delivery of asthma care and inform pathways between primary and secondary care. It was feasible to provide thorough specialist nurse reviews virtually within 45 minutes; this provided adequate time for standard asthma care delivery (PAAP, education, referral for further investigations and change in treatment, where applicable) and had excellent patient-feedback. However, we do recognise that face-to-face reviews may be beneficial or more appropriate in some circumstances. As most patients were continued to be managed in primary care, the resource-utilisation efficiency for the NHS is at several levels; improved patient outcomes, less utilisation of primary care resource, decrease in referral to secondary care, better quality referral as well as no inappropriate referrals.

There are certain aspects which need further consideration. Rather than the 4-8 week time frame between reviews, extending this time further may have advantages. Keeping a record of patients not referred and reevaluating at 6 to 12 months time might also be beneficial and to address this, a note was made on the patients electronic record. Lastly ongoing upskilling of primary care, both from the perspectives of optimising standard asthma care as well as knowledge regarding when to refer patients for assessment towards biological treatments, is very important in the longer-term.

References & Acknowledgements

1. *Asthma UK : Living in Limbo: the Scale of unmet need in difficult and severe asthma living-in-limbo---the-scale-of-unmet-need-in-difficult-and-severe-asthma.pdf* 2. Ryan D, et al. Potential Severe Asthma Hidden in UK Primary Care. J Allergy Clin Immunol Pract . 2021 Apr;9(4):1612-1623.e9.

Shoaib Faruqi has received speaker fees / support to attend meetings from AstraZeneca, GSK, Novartis, Chiesi, J&J and Adherium. **Michael G Crooks** has received grants from the National Institute for Health and Care Research, Asthma + Lung UK, AstraZeneca, Boehringer Ingelheim, Chiesi, Phillips, and Pfizer; honoraria, fees and/or non-financial support from AstraZeneca, Boehringer Ingelheim, Chiesi, GSK, Orion, Novartis, Pfizer and Synairgen. **Helena Cummings** has received team grants from AstraZeneca, and honoraria, fees and/or non-financial support from AstraZeneca, Chiesi and GSK.

Hull University Teaching Hospitals NHS Trust entered into a Joint Working arrangement with GSK with the pooling of skills, experience and resources. GSK funded NSHI Ltd to conduct the patient reviews.