PCRS pragmatic guide to caring for patients with asthma receiving biologic therapy

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This pragmatic guide focuses on the ongoing management of adults and children with severe asthma receiving biologic therapy and has been developed by an expert group led by Will Carroll, University Hospital of the North Midlands, Stoke-on-Trent and including Ernie Wong, Imperial College Healthcare NHS Trust, London, Beverley Bostock, Advanced Nurse Practitioner at Mann Cottage Surgery, Moreton-in-Marsh, and Asthma Lead for the Association of Respiratory Nurse Specialists, Fiona Mosgrove a GP in Aberdeen and Clinical Lead for the Grampian Respiratory Improvement Programme and Helena Cummings, Senior Respiratory Nurse Specialist and Severe Asthma Service Lead at Hull University Teaching Hospitals NHS Trust.

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Key facts:

- Around 5.4 million individuals – one in 12 adults and one in 11 children – are currently receiving treatment for asthma in the UK.[1]
- Around 200,000 people in the UK have severe asthma that does not respond to standard treatment.[2]
- Only around 1 in 5 patients with severe asthma who may be eligible for treatment with a biologic agent are currently receiving such therapy.[3]

Introduction

Severe asthma is defined by the European Respiratory Society (ERS) and the American Thoracic Society (ATS) as "*asthma which requires treatment with high-dose inhaled corticosteroids (ICS) in combination with a second controller medication and/or systemic corticosteroids to prevent it from becoming 'uncontrolled' or which remains uncontrolled despite this therapy*".[4] In the UK, around 4% of the estimated 5.4 million people diagnosed with asthma – approximately 200 000 people – meet these criteria and face the greatest risk for severe, life-threatening exacerbations of all people with asthma.[2,5–7] In fact, such is the burden imposed by severe asthma it is classed as a disability under the UK's Equality Act.[2]

Until relatively recently the only option for people with severe asthma was high-dose inhaled ICS in combination with one or more controller medications and repeated courses of oral corticosteroids (OCS).[4] Immunosuppressant therapy could also be considered for some people.[8] This meant that people diagnosed with severe asthma were faced not only with the risk of repeated and potentially life-threatening asthma attacks, but also with the additional risk to their health of repeated exposure to systemic OCS, including hypertension, diabetes, arthritis and osteopenia.[9–13] Healthcare systems also face additional costs to manage systemic OCS-induced morbidities.[9]

In the last decade, the picture has changed, especially for those with underlying demonstrable type 2 inflammatory process. Biologic agents that target underlying pathologic processes such as eosinophilia (elevated levels of circulating eosinophils) or 'damp down' inflammatory responses by inhibiting specific immune signalling pathways are now available. Five such agents have been approved for use in the UK as add-on maintenance therapy, benralizumab (Fasenra; AstraZeneca UK Ltd),[14] dupilumab (Dupixent; Sanofi Genzyme),[15] mepolizumab (Nucala; GSK),[16] omalizumab (Xolair; Novartis Pharmaceuticals)[17] and reslizumab (Cinqaero; Teva Pharmaceuticals)[18] (Table 1). A sixth biologic, tezepelumab (Tezspire; AstraZeneca) was approved in the European Union as an add-on maintenance treatment for the treatment of patients aged ≥12 years with severe asthma in September 2022 and is currently under review for use in the UK.[19] However, despite these potentially transformative medications' availability, only 1 in 5 patients with severe asthma who may be eligible for treatment with a biologic agent are currently receiving such therapy.[3] Moreover, the majority of referrals to secondary and specialist asthma services are reactive, taking place only once the patient has experienced several severe asthma exacerbations.

PCRS advocates a proactive approach to the identification of patients with potentially severe asthma. In 2020, we issued our first pragmatic guide for primary care on the management of patients with poorly controlled and severe asthma in which we outlined the triggers for referral to a severe asthma service.[8] In 2022, we expanded and updated our pragmatic guide on severe asthma to focus on the role of primary care in identifying those people with uncontrolled asthma, optimizing therapy and referring those still not well-controlled to specialist asthma services.[20] In our third pragmatic guide on the topic we focus on the role of primary care in managing patients diagnosed with severe asthma and who have been initiated on biologic therapy by specialist colleagues as they return to primary care for ongoing management.

Referral to specialist services in the UK

Biologic agents are prescribed in tertiary and some secondary care settings. However, before this can happen patients with severe asthma must be identified and referred to the appropriate specialist service. In 2021, a historical UK cohort study of data from the Optimum Patient Care Research Database and the UK Severe Asthma Registry found that 72% of adults with potentially severe asthma had no referral/specialist review in the past year.[7] The situation is no better, and more complicated, for children and young people, in whom definitions of severe asthma vary. In a survey of 219 healthcare professionals working in the UK, more than half of the GPs and almost three-quarters of general paediatricians reported adopting a higher threshold for specialist referral than the recommendations of the National Review of Asthma Deaths (See Box A).[21] Improving the rates of referral for patients with potential severe asthma and access to biologic therapies where appropriate is a key target for the NHS Accelerated Access Collaborative (AAC) under the Rapid Uptake of Products (RUP) programmes.

Box A: National Review of Asthma Deaths recommendations for referral to a specialist asthma service.

Patients with asthma must be referred to a specialist asthma service if:

- They have required more than two courses of systemic corticosteroids (oral or injected) in the previous 12 months OR
- They require management using British Thoracic Society (BTS) stepwise treatment 4 or 5 to achieve control

Available at: https://www.rcplondon.ac.uk/projects/outputs/why-asthma-still-kills. Accessed April 2023.

All patients with suspected severe asthma should be referred to a specialist asthma service for evaluation and, where appropriate, initiation of biologic therapy. In June 2022, the Oxford Academic Health Science Network (AHSN) published its consensus pathway for the management of uncontrolled asthma in adults (Figure 1).[22] The pathway lays out the roles and responsibilities of primary, secondary and tertiary care teams in identifying, diagnosing and delivering care for patients with suspected severe asthma. The role of primary care is to identify patients whose asthma is not well controlled and to determine whether this is due to poor adherence, incorrect inhaler technique, exposure to avoidable triggers, smoking or the effects of co-morbid conditions which can be optimised with current treatments. Smoking cessation support should be offered for those patients who continue to smoke. Once these reasons for poor symptom control have been ruled out those patients with possible severe asthma

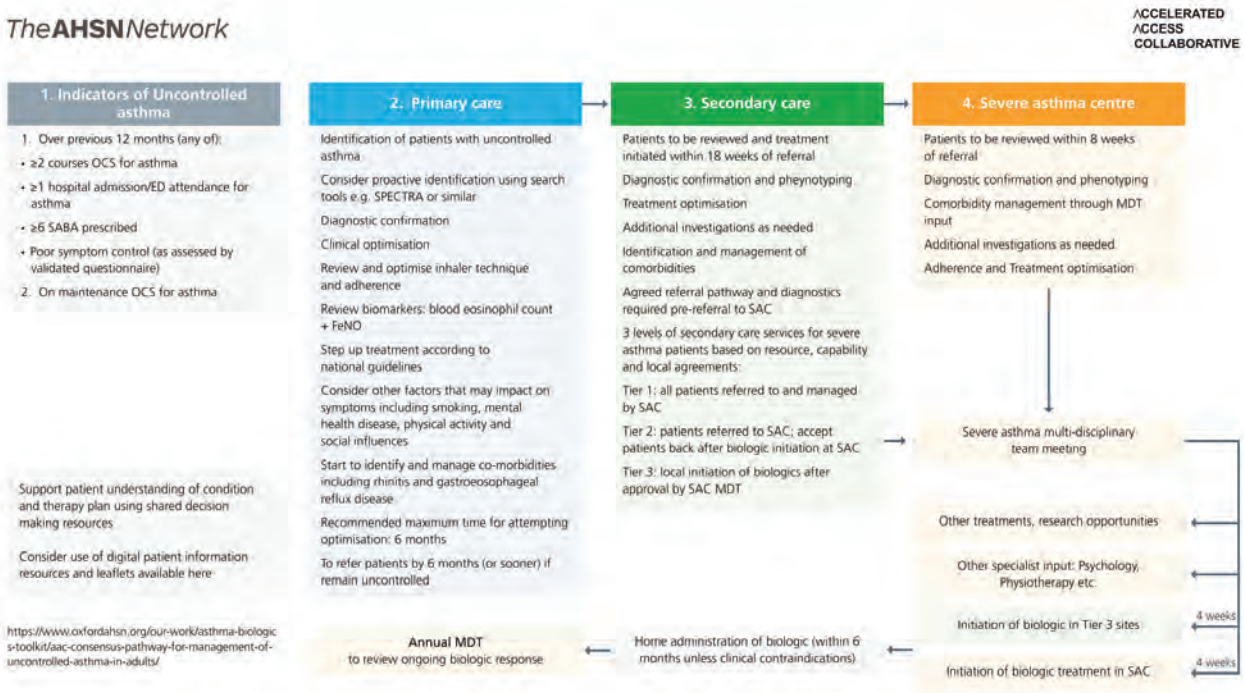
Table 1. Biologic agents approved for the treatment of severe asthma in the UK (as of April 2023).

Agent	Administration	Indication(s)	Eligibility criteria	Age group(s) and dose	Most common adverse effects
Benralizumab (Fasenra; AstraZeneca UK Ltd)[14]	Subcutaneous injection into the thigh or abdomen Pre-filled syringe	Add-on maintenance treatment of severe eosinophilic asthma inadequately controlled despite high-dose ICS + LABA	If blood eosinophils ≥300 cells/μL: ≥4 exacerbations in previous 12 months OR continuous OCS If blood eosinophils ≥400 cells/μL: ≥3 exacerbations in previous 12 months needing systemic CS	Adults (30 mg every 4 weeks for the first 3 doses and then every 8 weeks thereafter)	Headache, pharyngitis, pyrexia, injection site reactions, hypersensitivity reactions (urticaria and rash)
Dupilumab (Dupixent; Sanofi Genzyme)[15]	Subcutaneous injection into the thigh or abdomen Pre-filled pen	For patients not eligible for mepolizumab, reslizumab or benralizumab, or has asthma that has not responded adequately to these biological therapies as an add-on maintenance treatment of severe asthma with type 2 inflammation inadequately controlled with high dose (adults) or medium to high dose (children) ICS plus another medicinal product for maintenance treatment	Raised blood eosinophils (≥150 cells/μL), raised FeNO and ≥4 exacerbations in the last 12 months	Adults (initial dose of 400 mg followed by 200 mg every other week. For patients with severe asthma on OC, with comorbid moderate-to severe atopic dermatitis or severe chronic rhinosinusitis with nasal polyposis, initial dose if 600 mg followed by 200 mg every other week) Children ≥6 years of age (dose by body weight: 15–<30 kg, 100 mg every other week or 300 mg every four weeks; 30–<60 kg, 200 mg every other week or 300 mg every four weeks; ≥60 mg, 200 mg every other week)	Injection site reactions, conjunctivitis, arthralgia, oral herpes and eosinophilia *Safety warning issued in November 2022: risk of ocular adverse reactions*[a]
Mepolizumab (Nucala; GSK)[16]	Subcutaneous injection into the thigh or abdomen Pre-filled pen (for patients >11 years old) Pre-filled syringe	Severe eosinophilic asthma	If blood eosinophils ≥300 cells/μL: ≥4 exacerbations in previous 12 months OR continuous OCS If blood eosinophils ≥400 cells/μL: ≥3 exacerbations in previous 12 months needing systemic CS	Adults (100 mg every 4 weeks) Children ≥6 years of age (40 mg every 4 weeks)	Headache, injection site reactions (pain, swelling, erythema, pruritus) and back pain
Omalizumab (Xolair; Novartis Pharmaceutical)[17]	Subcutaneous injection into the thigh or abdomen Pre-filled syringe	Moderate to severe persistent allergic asthma (by positive skin test or in vitro reactivity to a perennial aeroallergen) not well controlled with ICS	IgE-mediated asthma Continuous or frequent OCS (≥4 courses in the previous 12 months)	Adults Children ≥6 years of age *Dose determined by baseline IgE and body weight with administration every 2 weeks*[17]	Headache and injection site reactions (pain, swelling, erythema, pruritus)
Reslizumab (Cinqaero; Teva Pharmaceuticals)[18]	Intravenous (administered in hospital)	Add-on therapy for severe eosinophilic asthma inadequately controlled despite high-dose ICS plus another medicinal product for maintenance treatment	Blood eosinophils ≥400 cells/μL ≥3 exacerbations in previous 12 months needing systemic CS	Adults *Dose determined by body weight with administration every 4 weeks*[18]	Increased blood creatine phosphokinase and anaphylactic reaction

[a] Most cases are mild but rare severe cases have been reported. Patients should be advised to be aware of and report ocular effects which should be promptly reviewed and treated or referred for urgent review in case of sudden vision changes or significant eye pain (NICE 2023).

CS, corticosteroid; ICS, inhaled corticosteroids; LABA, long-acting bronchodilator; OCS, oral corticosteroid.

Figure 1. AAC Consensus Pathway for the management of adults with uncontrolled asthma.[22]

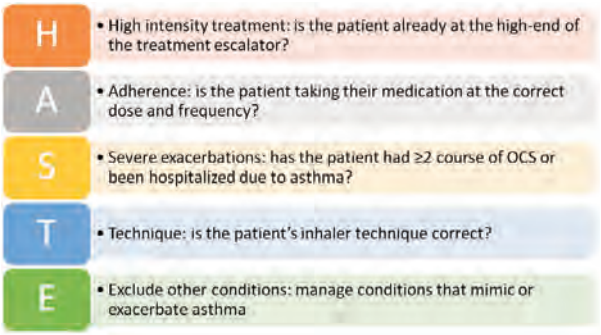


ED, emergency department; FeNO, fractional exhaled nitric oxide; MDT, multi-disciplinary team; OCS, oral corticosteroid; SABA, short-acting beta-agonist; SAC, severe asthma centre.

should then be referred for further evaluation.[20] The HASTE checklist provides a useful aide memoire to collate the key information that may indicate a referral for specialist evaluation is appropriate (Figure 2).

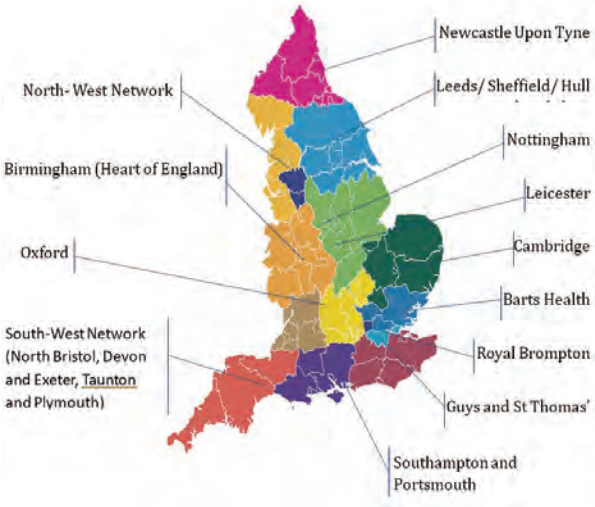
In 2021, recommendations were made to improve the referral process from primary to specialist care.[23] These include the direct referral of adults with suspected severe asthma to a severe asthma network (or service) by both primary and secondary care teams. There are currently 13 Severe Asthma Centres and network sites offering services for patients with severe asthma in England (Figure 3). The service models across these networks differ depending on the local population and facilities, although basic service provision criteria have been defined.[24] At present, the majority of referrals are made via secondary care teams, and

Figure 2. The HASTE checklist.[22]



OCS, oral corticosteroid.

Figure 3. Severe Asthma Centres and network sites offering services for patients with severe asthma in England.[22]



Reproduced from: https://www.oxfordahsn.org/our-work/respiratory/asthma-biologics-toolkit/severe-asthma-centres/ Accessed April 2023.

not all tertiary care specialist centres accept referrals direct from primary care (Table 2). In Wales, biologic therapy can be prescribed by respiratory specialists under the All Wales Adult Asthma Management and Prescribing Guideline.[25] In Scotland, an asthma secondary care service is in development to which patients with suspected severe asthma can be referred.[26] Plans for specialist severe asthma service provision in Northern Ireland are under review and there is a single regional service based in Belfast.

The pathway is less clear for children and young people.[27] Currently, severe asthma services for children in England are not formally commissioned and are only mentioned as part of the service specification for Paediatric Medicine. Many adult severe asthma networks do not offer a children's service, although some support adolescents as they transition to adult services (Table 2). As a result of this, the severe asthma service provided for children and young people by specialist respiratory centres varies between providers. Regardless, children and young people should be referred for tertiary-level review if, despite secondary care specialist review, the patient or their parents and the treating clinician agree that clinical improvement with optimal standard medication does not match expectations.[27] Put simply, a child or

Table 2. Severe Asthma Centres and network sites offering services for patients with severe asthma in England.

Severe Asthma Network	Nominated Centres	Contact
North West England and North Wales Network	Wythenshawe Hospital	https://mft.nhs.uk/wythenshawe/services/respiratory-and-allergy/asthma/
Birmingham and Regional Severe Asthma Service (Heart of England)	Heartlands Hospital, Russells Hall, New Cross, Sandwell: Birmingham City	https://hgs.uhb.nhs.uk/respiratory-medicine/
Oxford Special Airway Clinic	Oxford Centre for Respiratory Medicine, Churchill Hospital	https://www.ouh.nhs.uk/services/departments/specialist-medicine/respiratory-medicine/airway-clinic.aspx
South West Severe Asthma Operational Delivery Network	Somerset FT Plymouth Hospitals North Bristol (UHBW) Royal Devon and Exeter	https://www.england.nhs.uk/south/operational-delivery-networks/adult-medicine/severe-asthma-network/
Newcastle Upon Tyne	Newcastle Hospitals FT, Freeman Hospital. Royal Victoria Infirmary	https://www.newcastle-hospitals.nhs.uk/services/respiratory-service/complex-asthma/severe-asthma/
Leeds/Sheffield/Hull	Sheffield Teaching Hospitals NHS FT Leeds Teaching Hospitals NHS FT	https://www.leedsth.nhs.uk/a-z-of-services/respiratory-medicine/asthma/
Nottingham	Nottingham City Hospital	https://www.nuh.nhs.uk/severe-asthma-service/
Leicester (East Midlands Severe Asthma Service)	Glenfield Hospital, University Hospitals of Leicester NHS Trust	https://www.leicestershospitals.nhs.uk/aboutus/departments-services/respiratory-medicine/
East of England Severe Asthma Network	Cambridge University Hospitals NHS FT	https://www.cuh.nhs.uk/our-services/east-england-severe-asthma-network/
Barts Health (North Central and East London Severe Asthma Service)	Newham Hospital St Bartholomew's Hospital The Royal London Hospital Mile End Hospital Whipps Cross Hospital	https://www.bartshealth.nhs.uk/respiratory
Royal Brompton	Royal Brompton and Harefield Hospitals	https://www.rbht.nhs.uk/our-services/asthma-adults
Guys and St Thomas's	St Thomas' Hospital Guy's Hospital	https://www.guysandstthomas.nhs.uk/our-services/respiratory-medicine/clinics
Southampton, Portsmouth and Isle of Wight(Wessex Asthma Network)	University Hospitals Southampton and Portsmouth Hospitals NHS Trust	https://wessex-asthma.com/

FT, Foundation Trust.

young person with asthma who still fulfils the criteria for severe asthma despite secondary care involvement should be referred to either the local severe asthma service or the nearest tertiary paediatric respiratory centre for review and consideration of a biological treatment.

Examples of good pathways exist and the South Wales pathway is one such example. The South Wales Difficult Asthma Service for Children is based in the Children's Hospital for Wales, Cardiff and uses the Brompton paediatric difficult asthma protocol to evaluate and determine appropriate treatments including biologics.

Biologic therapy for severe asthma

There are currently five biologic agents approved for the treatment of severe asthma in the UK benralizumab (Fasenra; AstraZeneca UK Ltd),[14] dupilumab (Dupixent; Sanofi Genzyme),[15] mepolizumab (Nucala; GSK),[16] omalizumab (Xolair; Novartis Pharmaceutical)[17] and reslizumab (Cinqaero; Teva Pharmaceuticals)[18] (Table 1). Dupilumab, mepolizumab and omalizumab are licensed for use in adults and children aged ≥6 years.[15–17] Benralizumab and reslizumab are licensed for use in adults only.[14,18] Benralizumab, dupilumab, mepolizumab and omalizumab are administered via subcutaneous injection in the hospital or at home for confident, appropriately trained patients.[14–17] Reslizumab is administered in the hospital via intravenous injection every 4 weeks.[18]

All five agents are monoclonal antibodies and target different components of the immune system. Benralizumab, mepolizumab and reslizumab target interleukin5- (IL-5), a cytokine responsible for the growth, differentiation and activation of eosinophils, thereby reducing the production and survival of eosinophils. Dupilumab inhibits IL-4 through the Type 1 IL-4 receptor and IL-4 and IL-13 signalling through the respective Type 2 receptors. Omalizumab binds to immunoglobulin E (IgE) thereby inhibiting IgE-mediated inflammation. Given the different mechanisms of action, the eligibility criteria for each agent are slightly different and are summarized in Table 1. The requirement for oral steroids is an important consideration for all ages.

Defining a good response

Biologic therapies are maintenance therapy but should only be continued if a good response has been achieved. Criteria for a good response are shown in Box B.

Reducing OCS dependence

Patients with severe asthma eligible for biologic therapy are heavily dependent on OCS to maintain or regain control of their asthma symptoms. As shown in Box A, a key measure of success for patients receiving biologic therapy for severe asthma is a reduction in the dependence on OCS, although not all patients will be able to completely stop such treatment.[28] Benralizumab, dupilumab and mepolizumab have all been shown to reduce the daily dose of OCS in clinical trials.[29] For patients on continuous OCS, abrupt withdrawal of OCS should be avoided due to the risk of the emergence of adrenal insufficiency, instead the dose should be tapered gradually.[11] OCS tapering and assessment of adrenal sufficiency is most often supervised by the specialist team.

Box B: Defining a good response to biologic therapy for severe asthma.[22]

Good response at 6 months after initiation of biologic therapy by the specialist care team is defined as:

- Symptom improvement (e.g. ≥0.5 unit improvement in ACQ-6, AQLQ and/or ACT score)
- Reduction in OCS dose (e.g. >50%)
- Reduction in exacerbations and/or hospital admissions for asthma
- Patient expectations of improvement are met
- *Failure to meet these criteria should initiate an MDT review and consideration of switching or stopping biologic therapy*

Ongoing good response is defined as:

- No more than 1 severe exacerbation in preceding 12 months
- Sustained (or further) reduction in OCS dose

ACT, Asthma Control Test; ACQ-6, 6-item Asthma Control Questionnaire; AQLQ, Asthma Quality of Life Questionnaire; MDT, multidisciplinary team; OCS, oral corticosteroids.

Do they work in the 'real world'?

There is always a question when an entirely new medication is introduced as to how well they work in the 'real world' as opposed to the closely controlled setting of clinical trials. The answer to this question only comes once the medication has been in use for a period of time. The first such insights are now being reported for biologic agents for severe asthma in the UK.[30–34] In 2020, Joplin and colleagues reported a retrospective evaluation of 40 patients with severe asthma treated with a biologic agent in the UK.[31] The study found a statistically significant decrease in eosinophil count ($p \leq 0.0001$), the number of asthma exacerbations ($p \leq 0.0001$) and AQLQ score ($p=0.0002$) after 1 year of treatment. A numerical reduction in the mean long-term OCS dose was also reported although this did not reach statistical significance ($p=0.0724$).[31] In an international study of patients with severe

asthma treated with mepolizumab which included patients treated in the UK, exacerbation rates decreased and maintenance OCS doses were reduced, with 57% of patients able to discontinue OCS at 2 years.[30,33,34] A study focused on outcomes after 1 year of treatment with benralizumab for 139 patients with severe asthma reported similar results.[32]

Caring for patients with severe asthma receiving biologic therapy in primary care

Once prescribed a biologic agent, patients will continue to have direct access to their secondary or tertiary care team and will receive regular review. The majority of patients receiving biologic therapy, around 70% of adults and all children and young people, will remain under the care of the specialist team who will monitor their response to biologic therapy and adjust their treatment as necessary to achieve optimal symptom control.[24] This means that up to 30% of adults receiving biologics will be referred back to secondary and/or primary care for their ongoing asthma management. In addition, patients of all ages with severe asthma will require primary care support from healthcare professionals knowledgeable about their condition and treatment to deliver holistic care and support through the annual asthma review.

The role of primary care teams supporting patients with severe asthma will depend on the level of input from secondary and tertiary colleagues but may include conducting annual asthma and medication reviews, monitoring the ongoing response to biologic therapy and any emergent adverse events and monitoring and management of comorbid conditions.

An annual asthma review for patients with severe asthma receiving a biologic agent will be broadly similar to those for all asthma patients. Particular attention should be given to exposure to possible triggers, including environmental tobacco smoke. Where possible, family members should be offered assistance and support to stop smoking. The patient's written personalised asthma action plan should be checked and updated to ensure it remains in line with the recommendations from the specialist team. Peak expiratory flow rate (PEFR)-based symptom monitoring may be less useful to identify an impending exacerbation in patients with severe asthma.[6] Careful monitoring of symptoms and OCS use may be a better indicator for these patients.[6]

Biologic therapy does not replace maintenance asthma treatment. This means that an annual medication review to check adherence and inhaler technique should be conducted. A careful review of prescription records, any stockpiling of medications and a discussion about where and when asthma medications are being collected is vital. If non-adherence to prescribed preventer therapies is suspected communication between primary, secondary and tertiary care is essential. In addition, specific attention should be OCS use including daily dose for those still requiring continuous therapy and the number of courses in the previous 12 months for the treatment of exacerbations. An increase in daily symptoms, exacerbation rate, or OCS use may indicate a loss of asthma control and the need to re-refer to specialist colleagues for further evaluation (Box C).

Box C: Potential indicators of a need for re-referral to specialist services for patients with severe asthma managed in primary/secondary care.[22]

When compared to status at last MDT review:

- Reduction in symptom control (e.g. increase in ACT, ACQ-6 and/or AQLQ score)
- >1 severe exacerbation in the preceding 12 months
- Increase in daily average OCS dose

ACQ-6, 6-item Asthma Control Questionnaire; AQLQ, Asthma Quality of Life Questionnaire; MDT, multidisciplinary team; OCS, oral corticosteroids.

Most patients with severe asthma will have one or more comorbid conditions (e.g. rhinosinusitis, nasal polyposis) and risk factors for adverse health outcomes (e.g. obesity).[6] They may also have ongoing comorbid conditions as a result of long-term OCS exposure such as diabetes and osteopenia/osteoporosis.[6] Identification, management and monitoring of these conditions is an essential component of primary care for these patients.

Working with secondary/tertiary care colleagues to ensure holistic care

The AAC Consensus Pathway for the management of adults with uncontrolled asthma (Figure 1) recommends that local healthcare systems consider implementing an integrated care model with the formation of a respiratory multidisciplinary team (MDT) that includes a Respiratory Consultant, Specialist Nurse, Practice Nurse, General Practitioner, District Nurse and Pharmacist.[22] The role of the MDT will include:

1. Early identification of patients with suspected severe asthma and streamlining specialist referral after primary care optimisation,
2. Monitoring of patients on biologic therapy.

The MDT allows for a clear line of communication between primary and specialist care, avoiding the usual waiting time for outpatient appointments. The setup of MDT will differ according to local needs and capacity. However, Box D provides general guidance.

Box D: Guide for virtual severe asthma MDT set up.

When compared to status at last MDT review:

- Define MDT size (choose between single PCN/multiple PCN.
- Involve the wider primary care team including Pharmacists and Practice Nurses who have vital roles in monitoring patients.
- Set aside dedicated time for MDT members to attend (e.g. one hour every 2 weeks)
- Consider the use of a severe asthma identification tool and referral template.[35]
- Include education package as part of MDT for long-term practice improvement

MDT, multidisciplinary team; PCN, primary care network.

Conclusions

In 2019, a systematic review of the experience of individuals living with a diagnosis of severe asthma served as a stark reminder of the fundamental impact the disease, the lifestyle adjustments and the medication regimen required to deal with symptoms can have.[36] The review looked specifically at the lived experience of adults with severe asthma. Patients described a need to regain self-control and a sense of self-worth and to "*gain control and power over their condition*". Patients also expressed a desire for a partnership with their healthcare providers when making decisions about their treatment based on the trust established with a knowledgeable physician. These insights highlight the impact of severe asthma on an individual's sense of self and the need for a holistic and shared approach to their care. Achieving optimal care for patients with severe asthma requires their timely identification and referral for specialist review, input from secondary and tertiary care colleagues to ensure the diagnosis is correct and initiating them on appropriate medication and ongoing care from primary care to ensure all their healthcare needs are addressed.

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Pragmatic Guidance

Continue to offer an annual asthma review for all patients with severe asthma including those receiving biologic therapy.

- Ensure the reduction in annual exacerbation rate is maintained
- Include ACT, ACQ-6 or AQLQ evaluation and ensure improvement is maintained
- Review OCS dose and ensure dose is maintained or lower than previous annual review
- Assess adherence to ALL asthma medications

Ensure all patients with severe asthma receiving biologic therapy have an up to date personalised asthma action plan.

Document any comorbidities and ensure they are adequately controlled.

Document smoking status and offer smoking cessation support.

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