Advice for Healthcare Professionals Treating People with Asthma (adults) in relation to COVID-19

Does having asthma affect the risk of SARS-CoV-2 infection?
Asthma has not been shown to be associated with an increased risk of hospitalisation or worse outcomes due to COVID-19[1–4] Additionally, people with asthma admitted to hospital with COVID-19 very rarely present with an asthma exacerbation and SARS-CoV-2 infection is rarely associated with bronchospasm. However, we are learning more about COVID on a daily basis and patients should be advised to follow government recommended precautions including social distancing, hand hygiene and shielding if appropriate.

What can I suggest my patients do to keep themselves healthy?
For people with asthma, the best way of staying healthy and recovering if infected with COVID-19 is to ensure their asthma is as stable as possible. This means taking inhaled steroids and other routine medications regularly, as prescribed and detailed in their personal asthma action plan. Using their reliever inhaler is also important if asthma symptoms worsen. Ensuring people have optimal inhaler technique checked recently is essential and you can share this website: https://www.asthma.org.uk/advice/inhaler-videos/

Advise patients to ensure they have a sufficient supply of their medication at home and order them with enough time to ensure they do not run out. Emphasise that they do not need to over order/ stock up on their inhalers and they should not share their inhalers or spacers with family / friends.

Very few people with asthma need to use a nebuliser outside of hospital and in general it should be discouraged because using a pMDI of salbutamol through a spacer can be as effective:

- 4-6 puffs from a salbutamol pMDI into a spacer with a patient taking 2-3 tidal breaths is considered equivalent to a 2.5mg nebule of salbutamol
- 10-12 puffs is considered the equivalent of a 5mg nebule of salbutamol.

Those who have been prescribed a nebuliser should continue to use it as directed. The advice from Public Health England is that nebulisation is not a VIRAL droplet generating procedure and not considered an aerosol generating procedure for COVID-19.

It is natural for some patients to feel concerned or anxious about COVID-19. Strong emotions can trigger an asthma attack. Information for patients on coping with stress and anxiety is available here: https://www.mentalhealth.org.uk/publications/looking-after-your-mental-health-during-coronavirus-outbreak

Emphasise the importance of smoking cessation as current smoking has been shown to be associated with greater risk of severe complications from COVID-19[5].

Do inhaled corticosteroids (ICS) lower the immune system and put people at increased risk of COVID-19?
No. There is no evidence that inhaled steroids increase the risk of getting COVID-19 so please advise you patients to continue with all of their inhalers, including ICS and ICS/LABA combination inhalers. In fact, ICS may be protective against SARS-CoV-2 infection with proposed mechanisms including reducing expression of angiotensin-converting enzyme 2 (ACE2)[6,7], the putative viral entry receptor for SARS-CoV-2 and reducing replication of SARS-CoV-2[8]. However, further clinical and mechanistic studies are required to validate these hypotheses.

What about asthma exacerbations?
The management of asthma exacerbations is unchanged and patients should NOT stop taking their ICS containing inhaler. Patients should be advised to take their medication as guided by their personal asthma action plan and contact their GP surgery to organise a telephone, video or face-to-face consultation. If a course of steroids is clinically indicated (symptoms and signs of bronchospasm/wheeze), it should not be withheld. Antibiotics are only advised if sputum changes colour, thickens or increases in volume. If patients have a good understanding of their self-management plan then it is reasonable for them to have a short course of steroids at home (rescue pack). Refer to BTS/SIGN Guideline for the management of asthma: https://www.brit-thoracic.org.uk/quality-improvement/guidelines/asthma/

COVID-19 can present with symptoms similar to an asthma attack such as cough and shortness of breath. However, it is worth letting patients know that it is uncommon to get a high temperature, tiredness and changes in taste or smell with an asthma attack so the presence of these symptoms are more likely to suggest infection with SARS-CoV-2. If patients are not unwell enough to need hospital treatment, they should be advised to self-isolate at home (https://www.nhs.uk/conditions/coronavirus-covid-19/self-isolation-advice/), follow local guidance on testing and consult their asthma action plan.

What about oral steroids?
Oral steroids are not currently prescribed as part of the out-patient or community treatment for COVID-19 outside of clinical trials. If your patient develops symptoms and signs of an asthma exacerbation then they should follow their personalised asthma action plan and start a course of prednisolone if clinically indicated. Recent use of oral steroids has been shown to be associated with a higher risk of in-hospital COVID-19 related death[9] but this is likely to be reflective of poor disease control rather than the medication itself, reinforcing the importance of optimising ICS adherence.

For patients on maintenance oral corticosteroids:

- They should continue to take them at their prescribed dose as stopping steroids suddenly can be harmful.
- Reiterate the "sick day rules" and reminding patients that if they become unwell (for any other reason) they need to increase their steroid dose appropriately (usually doubled).

COVID-19 and *severe* asthma
The National Institute for Health and Care Excellence rapid guideline on COVID-19 and severe asthma is available here: https://www.nice.org.uk/guidance/ng166

Up to date advice for those who are clinically extremely vulnerable is available here: https://www.gov.uk/government/publications/guidance-on-shielding-and-protecting-extremely-vulnerable-persons-from-covid-19/guidance-on-shielding-and-protecting-extremely-vulnerable-persons-from-covid-19

Severe asthma is defined as asthma that requires treatment with high dose inhaled corticosteroids plus a second controller (LABA, leukotriene receptor antagonist or theophylline) and/or systemic corticosteroids to prevent it from becoming 'uncontrolled' *or* that remains 'uncontrolled' despite this therapy[10]. Patients with severe asthma are usually under the care of specialist centres and may be on biological therapy. People who have severe asthma and become unwell due to COVID-19 should be encouraged to inform their hospital asthma team.

Patients who are receiving biological therapies for their asthma should not stop their biologics as there is no evidence these are associated with a higher risk of SARS-CoV-2 infection or more severe COVID-19[11–13]. Most centres

have arranged for appropriate patients to receive their biologics via home-care or similar schemes. Patients should be advised to continue to attend for their biological treatment until they are transitioned to home care or if they receive their treatment intravenously.

Where can I get more information to share with my patients?

- Information about asthma and COVID-19 (Asthma UK): https://www.asthma.org.uk/coronavirus
- Information for people with other lung problems: https://www.blf.org.uk/support-for-you/coronavirus
- For advice on COVID-19: https://www.nhs.uk/conditions/coronavirus-covid-19/
- PCRS Position Statement on the diagnostic work up of the patient presenting with respiratory symptoms during the COVID-19 pandemic: https://www.pcrs-uk.org/sites/pcrs-uk.org/files/Diagnosis%20of%20asthma%20and%20COPD%20during%20Covid.pdf

Children:

Children with asthma are not at an increased risk of severe COVID-19 infection[14] and asthma attacks in children are not commonly triggered by SARS-CoV-2 respiratory tract infections[15]. Government advice states that children with severe asthma, including children treated with biologics or on maintenance oral corticosteroids, do not need to shield during the second period of national lockdown that started on November 5th 2020. However, there may be specific scenarios in which clinical teams decide that the child is extremely clinically vulnerable and recommend shielding. Information is available on the RCPCH website: https://www.rcpch.ac.uk/resources/covid-19-guidance-clinically-extremely-vulnerable-children-young-people

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(Please note this list is not exhaustive as relevant data on COVID-19 is rapidly and regularly published)

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Disclaimer: Advice has been based on PHE advice where available and expert opinion where not available. Variations to this advice may be required depending on clinical setting and individual patients.