



Student name: Mihaela Ganchev

Student ID: 2013873

Module name: Introduction to Physiology

Module code: BMHP5003

Lecturer name: Laila Surani

Assessment: Assessment 2, Written Report

Topic: *Asthma*

Word Count:1800

Table of Contents

1. Introduction
2. Anatomy and Physiology
3. Health and Lifestyle routing measures
4. Health and Social Care Practice
5. Recommendations
6. Conclusion
7. References

1. Introduction

Asthma is a noncommunicable disease or a chronic disease, which means that it does not spread through any kind of contact. It can affect both young and older people. Asthma is a long-term condition, and it can not be treated, but the disease can be treated, and the symptoms can be reduced. Due to inflammation and stiffness of the muscles surrounding the tiny airways, the air channels in the lungs get restricted and through that the person is not able to get enough oxygen into their lungs. Symptoms of Asthma can be such as coughing, wheezing, shortness of breath, and a tight chest. These sensations come and go and are usually worst at night or during activity. Other common "triggers" can aggravate asthma symptoms. Triggers differ from person to person, but they might include viral illnesses e.g., colds, dust, smoke, chemicals, changes in weather, grass and tree pollen, animal hair and feathers, harsh soaps, scent, or mould. (*Asthma, 2021*)

2. Anatomy and Physiology

Anatomy is an area connected to biological sciences. It focuses on the structure of our bodies. Learning about anatomy is discovering for example the different human body systems. (*Brazier, 2020*) Physiology is the study of the way the human body is working. (*Newman, 2017*) Asthma is a disease of the airways, so it finds place within the respiratory system. Parts of it are the lungs in which we find the bronchioles and alveoli (small airbags, where oxygen is being exchanged), the bronchi, trachea, which is connecting our throat with the lungs, larynx, that helps to be able to talk, pharynx that is the throat, the nasal cavity, and the mouth. Through the respiratory system we can talk and smell. It changes the air that we breathe that we take in, so it has the same body temperature and humidity levels as our body. The oxygen taken it is then being transported to the different cells. Useless gases e.g., CO₂ (Carbon dioxide) are being removed from the body by exhaling it. Connecting physiology, the diaphragm, which is a muscle, that helps the lungs to take in air and to breathe out and the ribs that are protecting the lungs and the heart. (*Respiratory System, 2020*) The main problem leading to asthma is the narrowing of the airway. Asthma steps in when the specific patient's asthma is being triggered for example by polluted air, dust, cold or even stress. (*Asthma, 2022*) Then the airways start to get blocked because of the muscle tightening or also called bronchospasm and the excessive mucus, which is a secretion coming from the different type of the body in this case, the lungs. (*AAFA Community Services, no date*) While having an asthma attack it would help to sit down straight and try to remain calm, using the inhaler, which is usually blue and contains salbutamol, which is used to relieve symptoms by relaxing the muscles. It can be as well find in different forms. (*Salbutamol: inhaler to relieve asthma and breathlessness*) The inhaler is being used by taking 1 puff every thirty to sixty second and this

until 10 puffs are reached and if this does not work 999 should be contacted. (*Asthma - asthma attacks*)

3. Health and Lifestyle routine measures

Some measures need to become a routine, so Asthma attacks can be prevented. An Asthma action plan should always be used. Through the plan the patient is better informed about the symptoms and so the person is less likely to end up in a hospital if he can recognize the symptoms that might lead to an attack. It is there to show people how to deal with the disease in their daily life. Each asthma patient can get their plan by their general practitioner or a nurse. It is as well recommended to always use the inhaler even if there are no symptoms. It helps in prevention of eventual following triggers. It also helps the airway to not get inflamed and followed by that, blocked. Remaining the routine measurements there will be less risk for the patient. The reliever should be also always with the person in case something unexpected happens. Through the action plan it can be seen if the asthma is getting worse, but also by how often we use the inhaler. The patient should as well regularly go to their asthma annual reviews, to which they are being invited by their general practice each year. Through this appointment the patients will always know if he is still taking the right dose medication, that is best for his health. (*Creticos, 2000*) Other things that the person can do is to remain good control before exercising, as well as warming up for a minimum of 10 minutes. Triggers should be avoided while exercising and new exercises should be started slowly. (*Lifestyle changes to manage asthma*)

4. Health and Social Care practice

Asthma is included in the WHO Global Action Plan for NCD Prevention and Control, as well as the United Nations 2030 Agenda for Sustainable Development. In a variety of approaches, WHO is working to improve asthma diagnosis and treatment. The WHO Package of Essential Noncommunicable Disease Interventions (PEN) was created to aid enhance NCD management in primary health care in low-resource settings. PEN comprises procedures for the evaluation, identification, and therapy of chronic respiratory disorders (asthma and chronic obstructive pulmonary disease), as well as courses on good lifestyle coaching, such as smoke cessation and self-care. Tobacco smoke reduction is crucial for both primary asthma prevention and infection control. The Framework Convention on Tobacco Control, as well as WHO programmes like as MPOWER and mTobacco Cessation, are facilitating development in this area. The Global Alliance for Chronic Respiratory Illnesses (GARD) helps WHO prevent and control chronic respiratory diseases. GARD is a free organization of international bodies and agencies from a variety of nations who are aiming the reduction of people with asthma. (*Asthma, 2021*) General Practitioners are helping by giving opportunities to the patient to manage his asthma by day-to-day care in which they diagnose, prescribe something if required and to change the previous action plan. Asthma annual reviews for check-ups, even for children it is recommended to go at least once a year. Depending on the level of their asthma, some patients might need to go more often. If using an inhaler at least three times a week, the GP should be informed as well. (*Meet your asthma healthcare team, 2019*) Asthma + Lung UK is having in addition the campaign to support people with severe asthma to get more easily support. On the NHS, biologic therapies, a novel type of drug that works differently than standard asthma treatments, are now accessible. They can alleviate symptoms, minimise asthma episodes, and eliminate the need for steroid medications. (*Do no harm*) #AskAboutAsthma was a campaign in London back in 2020 that supported the children and young people and that each one of them should have an asthma management plan, proper inhaler, which they are

informed how to use and annual reviews. It aimed to increase the QoF (Quality of Life) of children in London who live with asthma. The campaign was supported by the mayor, Sadiq Khan. It included one week of webinars and information being shared by blogs, podcasts, and other social media. They were putting focus on pharmacies. Schools, nurses, air pollution and the families of the ones with asthma. (*#AskAboutAsthma campaign 2020*)

5. Recommendations

Losing weight is helping people who are overweight or obese. People with >30 BMI are at higher risk of having asthma. 11 % of adult, who are as well obese are having asthma and 15% from obese women are having asthma. The extra weight that is around the chest and abdomen is restricting the lungs from getting enough oxygen. In Addition, the fat tissue is also producing inflammatory products that are affecting the lungs. (The link between asthma and weight, 2020) Getting the flu vaccine is also important to people with asthma, because asthma can lead to serious problems when having the flu. People with asthma are regularly advised by their GP surgeries to do it. Smoking is probably one of the worst triggers of Asthma. Even second-hand smoking. Smoking, whether it's cigarettes, cigars, pipes, shisha, or roll-ups, raises your chance of asthma symptoms and attacks. Furthermore, smokers require greater dosages of steroid preventer medication to keep the inflammation in their airways at bay. This implies that your asthma is more difficult to control every day, and the patient is more likely to have symptoms such as shortness of breath, coughing, wheezing, and a tight chest. In the long run, if your asthma remains difficult to treat and you continue to smoke, you will be more likely to develop other serious lung disorders such as COPD (Chronic Obstructive Pulmonary Disease). The NHS recommends different types of help to stop smoking, such as 1-1 sessions, but also group meeting to stop smoking. (NHS stop smoking services help you quit) During COVID-19 people with might be in need of breathing tests. If you have an in-person visit, the person may not be given a spirometry test. This is because spirometry has been delayed or lowered in order to limit the danger of coronavirus infection. Spirometry is still accessible in some areas provided a risk assessment is performed and the risk is deemed minimal. The Peak flow test might help patients keep the track of their asthma symptoms. In case they have their own peak flow metre, they can continue to test it. Patient may perform this at home on a regular basis, adding the results to a peak flow diary chart. If a patient is having a face-to-face appointment, they should bring own peak flow metre. The GP or asthma nurse may ask the patient to monitor your peak flow using your own peak flow metre if you have a video/online asthma review. If you don't have a peak flow metre and need one, ask your doctor to prescribe one for you. (What should people with asthma do now?)

6. Conclusion

As summary, asthma is a chronic respiratory disorder results in impaired breathing, wheezing, coughing, and tightness of the chest. The main symptoms of asthma might include narrowing and swelling of the airways, as well as increased mucus production and dry throat. Asthma is being diagnosed through physical examinations, lung function testing, blood tests, and chest X-rays. Long-term asthma treatments include symptom preventers and symptom controllers. Symptom controllers could be action plans, annual reviews, and regular use of inhaler. Through the intervention of different organisation everyone is as well getting access to health care. Regularly reviews, campaigns and health measures are also helping people with asthma from getting socially isolated, since they might not be able to attend some events or regularly going to work.

7. References

AAFA Community Services (no date) What happens in your airways when you have asthma?, Asthma and Allergy Foundation of America. Available at: <https://community.aafa.org/blog/what-happens-in-your-airways-when-you-have-asthma> (Accessed: April 13, 2022).

#AskAboutAsthma campaign 2020 (2017) Healthy London Partnership. Available at: <https://www.healthylondon.org/our-work/children-young-people/asthma/askaboutasthma/> (Accessed: April 13, 2022).

Asthma (no date a) Who.int. Available at: <https://www.who.int/news-room/fact-sheets/detail/asthma> (Accessed: April 13, 2022)

Asthma (no date b) Mayo Clinic. Available at: <https://www.mayoclinic.org/diseases-conditions/asthma/symptoms-causes/syc-20369653> (Accessed: April 13, 2022).

Asthma - asthma attacks (no date) nhs.uk. Available at: <https://www.nhs.uk/conditions/asthma/asthma-attack/> (Accessed: April 26, 2022).

Brazier, Y. (2020) Anatomy: What is it, and why is it important? Medicalnewstoday.com. Available at: <https://www.medicalnewstoday.com/articles/248743> (Accessed: April 13, 2022).

Creticos, P. S. (2000) "Managing asthma in adults," The American journal of managed care, 6(17 Suppl), pp. S940-63. Available at: <https://www.asthma.org.uk/advice/manage-your-asthma/adults/> (Accessed: April 13, 2022).

Do no harm (no date) Asthma + Lung UK. Available at: <https://www.asthma.org.uk/support-us/campaigns/publications/do-no-harm/> (Accessed: April 13, 2022).

Lifestyle changes to manage asthma (no date) Winchesterhospital.org. Available at: <https://www.winchesterhospital.org/health-library/article?id=19111> (Accessed: April 13, 2022).

Meet your asthma healthcare team (no date) Asthma + Lung UK. Available at: <https://www.asthma.org.uk/advice/nhs-care/healthcare-team/> (Accessed: April 13, 2022).

Newman, T. (2017) Introduction to physiology: History, biological systems, and branches, Medicalnewstoday.com. Available at: <https://www.medicalnewstoday.com/articles/248791> (Accessed: April 13, 2022).

Respiratory System (no date) Cleveland Clinic. Available at: <https://my.clevelandclinic.org/health/articles/21205-respiratory-system> (Accessed: April 13, 2022).

Salbutamol: inhaler to relieve asthma and breathlessness (no date) nhs.uk. Available at: <https://www.nhs.uk/medicines/salbutamol-inhaler/> (Accessed: April 13, 2022).

NHS stop smoking services help you quit (no date) nhs.uk. Available at: <https://www.nhs.uk/live-well/quit-smoking/nhs-stop-smoking-services-help-you-quit/> (Accessed: April 13, 2022).

The link between asthma and weight (no date) Lung.org. Available at: <https://www.lung.org/blog/the-link-between-asthma-weight> (Accessed: April 13, 2022).

What should people with asthma do now? (no date) Asthma + Lung UK. Available at: <https://www.asthma.org.uk/advice/triggers/coronavirus-covid-19/what-should-people-with-asthma-do-now/> (Accessed: April 26, 2022).