Heart disease essay sample

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The heart pumps blood around the body, supplying oxygen to all the organs, including the heart itself. The vessels that carry blood to the heart muscle are called coronary arteries (1). There are two sides to the heart, each of which acts as a separate pump. The two halves are sub-divided into four chambers, so there are four chambers in all (2). A healthy heart will function in this way, but disruptions along the cardiac cycle can cause serious problems to the heart and lead to conditions, such as Heart disease.

Coronary heart disease or (CHD) is more common in the elderly and affects 4 times more men than women according to recent studies (2). Coronary heart disease comes in two main forms: heart attack and angina.

The coronary arteries become narrow with the build-up of fatty deposits, which may build-up over the course of 20-30 years. This will reduce the flow of blood to the heart and increases the chances of a blood clot blocking the artery, and becoming lodged in the coronary vessel. The blood cannot reach the heart muscle beyond this clot and a section of the heart then dies. This is also known as thrombosis (4).

Thrombosis is one of the central problems in coronary heart disease. It is the cause of sudden deterioration in angina and most heart attacks. Fatty deposits known as ‘ plaques’ are made up of many substances including a fatty substance called cholesterol.

Cholesterol is a type of fatty substance that’s naturally made in the body and is needed to help build up sex hormones in the body. Several different lipoproteins are responsible for the transport of cholesterol in our bodies.

Two in particular are important in CHD -low -density lipoproteins (LDLs) and high-density lipoproteins (HDLs).

High levels of LDL cholesterol are linked to the development of atherosclerosis and CHD, and are known as ‘ bad cholesterol’. High levels of HDL cholesterol have a protective effect and so cholesterol transported by HDLs is called ‘ good cholesterol (1).

The fatty deposits (lipids) are made up of decaying muscle cells, cholesterol, calcium and other substances. These fatty deposits are also known as Atherosclerosis (3) and are due to thickening of the arterial wall caused by fat, fibrous tissue and salts being deposited on it. This condition is sometimes referred to as hardening of the arteries, and is the process that leads to coronary heart disease.

Atherosclerosis occurs when the heart muscle does not receive enough oxygen due to a narrowing of one of the arteries that supply blood to the heart. The condition is usually brought on by physical exertion, emotional stress or extreme temperatures (5).

It causes pains or cramps in the chest (angina) or legs during exercise, because you’re not able to get enough oxygen to the heart or legs (3). The pain can also spread to the arms, neck, jaw, face, back or stomach. You are more at risk to atherosclerosis or coronary heart disease or a heart attack if you smoke, have high blood pressure, high cholesterol levels or obese (very overweight) people with diabetes or a history of atherosclerosis are also high risk.

A heart attack or (myocardial infarction) is one of the first signs of CHD. Unlike the pain of angina, it doesn't go away, but continues to become more severe. This is the final result, when the diseased coronary artery becomes completely blocked by a clot or thrombus. The heart muscle or myocardium beyond the clot, is suddenly starved of blood and oxygen, and becomes painful, a pain that becomes more intense as the minutes pass (2).

Unless the clot disperses itself, then the area of heart muscle dies within 5-10 minutes, resulting in a fully blown heart attack. The size of the heart attack depends on the amount of damaged muscle. The size of the artery is a factor, because the bigger the artery that is blocked the bigger the area of damage. The area of damage is usually greater when other coronary arteries are also diseased.

The warning signs of a heart attack include a crushing pain in the centre of your chest, which spreads to the shoulders, neck or arms. It also makes you feel breathless and dizzy, and a feeling of nausea. The skin may also be clammy to the touch, and have a grey appearance (3). You will also have an increased or irregular heart rate (palpitations) during a heart attack.

If a heart attack affects the bottom of the heart and affects less than 10% this would be considered a mild attack, but if more than 40% of the heart is damaged then death can occur (6). A heart attack is a signal that some lifestyle changes need to be made, like eating a healthier diet, exercise and if you smoke then you should quit.

The most common symptom of arrhythmias is ' palpitations' the awareness of the heartbeat. It will occur as a beating that is hard enough to be felt in

the chest and the upper abdomen. The causes for arrhythmias and palpitations are lack of sleep, stress, caffeine and nicotine and over the counter medicines (decongestants) or medications related to a heart condition (7).

The condition of arrhythmias is also a sign that will be associated with heart failure.

Heart failure can be caused by many diseases affecting the heart, especially high blood pressure, but in western countries, CHD is probably the most common cause related to the disease.

The term heart failure, simply means that your heart isn’t pumping blood as well as it should. Heart failure doesn’t mean that the heart has stopped working altogether or that you are having a heart attack, but it works by attacking the lungs with congestion of blood and also leading to breathlessness. Congestion of the rest of the body also leads to fluid retention, which makes the legs and ankles swell. Heart failure is also called ‘ congestive heart failure’ or CHF for short.

People diagnosed with heart failure usually have had a heart attack in the past, though other symptoms related to the condition can be connected in relation to this. Other symptoms include, coronary artery disease, cardiomyopathy (problems with the heart muscle itself) high blood pressure, problems with heart valves, arrhythmias, alcohol abuse and congenital heart disease.

The symptoms of heart failure include, shortness of breath (in walking or lying in bed) general tiredness or weakness, increased weight gain (1-2 pounds a day for 3 days in a row) and a noticeably chronic cough is also a signal to indicate that something is wrong (8).

Risk factors for heart disease are divided into those we can do something about (modifiable) and those we cannot (non-modifiable).

Modifiable risks that contribute to the risk of developing CHD are smoking, raised cholesterol, high blood pressure, diabetes, obesity, stress and lack of physical exercise. The non-modifiable risks that contribute to CHD are genetic factors – inherited high cholesterol level, gender – more men in general develop CHD than women, and age is also a factor , because the over 50s are more commonly diagnosed with the disease compared to the younger generation.

Many symptoms can be controlled with prescribed medication or by surgery. Tests to see what stage the condition is at would be arranged by a GP. The most common test for heart conditions is the electrocardiograph or ECG for short.

Electrical changes in the heart beat can be picked by placing electrodes on various points on the body. The test usually takes 10 minutes and can be done by a doctor or practice nurse (2).

An x-ray can also show what is wrong with the function of the heart. A special x-ray can be undertaken to show the coronary arteries called an

angiogram. A special dye is injected directly into the coronary arteries, so that a picture of them can be seen on an x-ray.

A blocked coronary artery can be expanded with a procedure called an angioplasty. This procedure involves a catheter being placed inside the artery; the catheter also has a balloon attached on the tip of it (9). The artery is inflated at the site of the constriction, enabling the blood vessel to dilate properly. This will help the artery work well and prevent further complications. These procedures can be prevented if lifestyle changes could be made before too much damage has been done.

Coronary heart disease can be inherited through our parent’s genes. We can inherit high cholesterol, high blood pressure or diabetes from our families. Similar lifestyles can contribute to the disease being passed down, like eating the same food, or if the parents smoke, then often their children do as well (2).

Many suffers that have inherited CHD can change their lifestyles so that their condition can be managed more effectively. If they are smokers, then it would be beneficial to them if they quit, or at least reduce their tobacco intake. Changes in their eating habits (healthy eating) would also help reduce the cholesterol levels instead of increasing them.

Alcohol levels can also be controlled to prevent further complications, and by reducing the alcohol intake by 2-3 units per day, as this would be the normal recommended daily amount, instead of a large intake which can poison the heart and cause serious consequences to the individual.

Controlling stress levels and participating in exercise can assist with reducing high blood pressure and making it more manageable and this would be beneficial to prolonging life and reducing the effects of coronary heart disease.