**Introduction**

Atrial fibrillation is also known as “AF” or “AFib” in its short form. This condition refers to having an irregular heartbeat or quivering. The irregularity of the heartbeat in most cases has severe consequences such as blood clots, heart failure, stroke, and other conditions related to heart complications. There are many Americans living with this complication that has been said to be the most common cause for other cardiac-related cases. The heart, during atrial fibrillation, contracts, and there is a relaxation tuned to a regular heartbeat. This heartbeat does not cause the right flow of blood into the ventricles, and the constrictions lead to great complications. The reason why several people diagnosed with heart arrhythmia have strokes is that the clots break off during the process (Andrade et al., 2014). The clots then lodge into an artery and lead to the brain, which generally causes a shock to the cardiac system. There has been a maximum of 20% of all the patients who have been found to have this complication and the same processes towards the cause. The solution to the clot risks has been found to be putting the patients on blood thinners and avoiding failures of this manner. Besides looking into heart failure as the most common complications of atrial fibrillation, the essay discusses thrombi formation in depth and its relation to atrial fibrillation (Kirchhof et al, 2016). This will include treatment options as well as the appropriate nursing care and management for patients with this condition.

**Atrial Fibrillation Demographics**

There are several risks that come with ignoring the symptoms associated with atrial fibrillation. Several patients are never aware of their condition until the cardiac complications are worsened. The heart arrhythmia has been said to cause a five-fold risk in terms of increased stroke patients. This means that there is unawareness concerning the seriousness of this condition. The unawareness is also a result of lack of education on these common causes of complicated heart conditions. Research done in 2009 shows that only 33% of patients with AFib think that it is a serious condition that requires quick treatment and prompt management as well as nursing care. The bigger percentage is ignorant of the complications that may arise from the condition (Yamamoto et al., 2014). This is mainly because, during its early stages, the condition is never threatening in any way and shows no signs of causing complications in the long run.

Research indicates that less than half of the AF patients believe that they are at a higher risk of getting a stroke or any other heart-related conditions that would lead to further hospitalisation or even death (Kotecha & Piccini, 2015). These demographics go to show that atrial fibrillation is never taken as seriously as it ought to by those who fall victims of the same. However, the patients cannot be faulted for the lack of awareness from healthcare providers and a sense of ignorance from the general population. The poor communication strategies concerning the condition result in the demographics above.

**Thrombi Formation**

The most common establishment is that peripheral immobilisation, atrial thrombi formation, and atrial fibrillation are all associated. These three associations are what lead to other thromboembolic complications and even strokes. These situations are a general problem for various clinical procedures. This is also based on the findings that the risks of strokes related to thromboembolism are over 2% per year in patients diagnosed with atrial fibrillation. There are, however, several variables that lead to the formation of thrombi (Rillig et al., 2016).The formation of thrombi is, however, blamed on three things that are considered responsible for the same. The first is the blood coagulation status, followed by the status of the vessel wall and, lastly, the reduced blood flow within the system. These issues grouped together are known as the “Virchow’s triad.”

All patients with atrial fibrillation are said to have endothelial dysfunctions, hyper-coagulable states, and blood stasis. These issues are not based on the stage of the complication. It is evident that, even with the slightest symptoms, these states are present, and all have common effects on the complications that are caused eventually. The Virchow’s triad requires that special treatment plans be taken for the sake of reversing the condition rather than being at constant war with over two per cent of people dying every year because of failed experiments. According to research done on this area, there have been proven theories that state the link between thrombogenesis and inflammation and how each results from either one of the others.

Once atrial fibrillation is reversed to sinus rhythm, there is a high chance that blood stasis is stopped. This is the first part of the Virchow’s triad (Calkins et al, 2017). The prevention of thromboembolic complications is best done through the hypercoagulable state and has been proved to be the most effective for the prevention of atrial fibrillation. There is some research that has not been completed in line with endothelial dysfunction. This issue is what the researchers assume to be the reason as to why most patients, ranging from 1-1.7%, suffer strokes despite the use of anticoagulant therapy (January et al., 2014). This is supposed to be the most effective and most reliable form of treatment for the patients. Inflammation has been linked to thrombi formation where coagulation abnormalities are raised due to inflammatory cases and, eventually, atrial fibrillation.

Thrombi formation means that abnormal clots in the artery or vein are formed. The body in its natural ability is only meant to form clots when defending it against bleeding. These clots are formed through a series of chemical reactions between platelets and proteins (Harada, Van & Nattel, 2015). When the platelets do not regulate the clotting process, there may be complications with the blood vessels and the surrounding tissues, which all result from a blocked blood flow. The effect on the body is dependent on the location of the clot and its type. In this case, the thrombi are formed when the clot is in the artery within the heart or the brain, and a cardiac complication results from the same.

Treatment for these clots may be using Heparin, which is a strong blood thinner, and also works rapidly to correct such situations. The medication works within minutes and saves patients from further coagulation, which eventually prevents thromboembolic complications. Patients who use this medication are monitored on a daily basis and have their blood tested daily for coagulations and any types of clots that may be evident. The checkup for these patients is known as “aPTT,” which, in full, is activated partial thromboplastin time. The medication may also be given along with another anticoagulant for patients with more complicated cases. Nursing care is, therefore, extremely necessary in this case and determines what eventually results from the processes. Heparin is known to be of low cost, and, with its effectiveness, it is useful for the prevention of atrial thrombi formation altogether without delay.

**Heart Failure**

There are about 5 million patients in the United States who suffer heart failure. This comes with more than half a million people diagnosed with new heart failure every year. Atrial fibrillation is known to facilitate heart failure in one way or the other. Shorter diastolic filling terms are what result from the resting heart rate that results from having atrial fibrillation. Heart failure and atrial fibrillation are closely tied to each other, and one may affect the other to either increase or develop. In this case, the cause for heart failure is mainly the lack of strength needed for the heart to pump blood to the rest of the body and provide the necessary amount of oxygen to all other parts of the body (Santhanakrishnan et al., 2016). The reason why atrial fibrillation leads to heart failure is that it has inability to beat at a normal and steady pace. When the heart beats faster than normal, it is not able to send enough blood as it is normally supposed to. This means that only a fraction of the total is sent throughout the body and does not supply enough oxygen through vessels and consequent tissues.

The lungs are also affected in this case in that, once this happens, they are filled up with fluid and, in return, fill the blood with oxygen, which may not be sent back to the heart on time. The heart requires oxygen for it to function and does not get enough oxygen once the lungs are filled up with fluid and do not function rightly. The heart is not also able to pump out the excess oxygen due to its rapid heartbeat and the uncoordinated beat along with the rest of the body functions (Iwasaki et al., 2011). This causes damage to the muscles of the heart overtime, making it weak and/or dysfunctional without the right medication provided to correct it. In some cases, heart failure may not always come owing to atrial fibrillation. The reason for this is that atrial fibrillation may also result from heart failure.

When the heart tissue is not healthy, the electrical signals controlled by the heart’s rhythm may not function appropriately. Heart failure, in some cases, will, therefore, stretch the heart tissue, causing it to be scarred and thick. The inflammation is what disrupts the rhythm of the heart and causes the rhythm to be disrupted and uncoordinated. There are situations that raise the probability of heart failure and atrial fibrillation at the same time (Xiong et al., 2015). The chances are that most patients will be diagnosed with both conditions due to risks that have not been controlled. Age has been proved to be a possible condition for atrial fibrillation and heart failure. This is mostly due to reduced activity and lack of focus on nutrition.

Besides this situation, genetics are also a good playground for both conditions to exist and may be resulting from a series of cases from the previous generations. It is not always necessary that people with a common genealogical case get affected, but a greater percentage is always affected. There are special management and nursing care strategies for patients with heart failure and atrial fibrillation. The number of people with AFib and heart failure is increasingly counted in their old age. It is a key component to educate those with these conditions for them to learn how to manage their conditions whilst on their own. Nurses need to assess the patients constantly for improvement and ensure that there are no further consequences from their conditions. Ensuring that the patients have a heart-healthy diet is great for growth and improvement in their livelihood as persons and for the sake of those after them (Ruff et al., 2014). The assessment of each patient is based on his or her needs for improvement to be noted within the shortest time possible. These management strategies are very effective and improve the patients’ health rapidly.

**Conclusion**

The findings indicate that atrial fibrillation relative to heart failure and thrombi formation presents a high morbidity risk as well as mortality and high costs in healthcare. The relation of these three in their separate pathophysiology is relative to the dominance of cardiovascular care and the necessity of the same over the years. The solution to a non-recurrence of atrial fibrillation is the necessity that comes with giving treatment in accordance with the best evidence provided, concerning certain complications and the issues that come along with the same. There are high chances that, if treatment is not well regulated, there may be consequent issues relative to the burdens that result on a global scale. To rectify this situation, the most important issue is relative to education and treatment costs. The diversity in treatment is present, but there is not much hope for lower costs when looking into cardiovascular treatment. The lack of knowledge concerning this condition also comes with a price in that millions of people are diagnosed with the resulting complications once atrial fibrillation gets to its later stages and cannot be easily rectified, using regular medication. This is an avoidable condition that is mainly through education.

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