

Gerontology Case Study: Atrial Fibrillation

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Abstract

This paper studies a case scenario of a female patient Mrs. A. and the management of her current disease. She is obese and has different diagnoses, including osteoporosis, hypertension, and diabetes mellitus type 2. Currently, she suffers from the atrial fibrillation; supposedly, it has developed due to such risk factors as obesity and alcohol intake. She lives together with her husband who is 76 years old. However, she has not adhered to any antihypertensive medication plan at home; obliquely, this fact indicates that her husband does not encourage the woman to manage her disease appropriately. Although the prevalence and incidence of the atrial fibrillation are increasing, Mrs. A. can manage it efficiently. For instance, the interdisciplinary team that includes a doctor, nurse, dietitian, and cardiologist can play an immense role in managing the condition in the patient. Most importantly, a nurse should use an evidence-based approach to managing the disease, which involves the use of medicines and appropriate education that can help Mrs. A. follow all healthcare recommendations.

Gerontology Case Study: Atrial Fibrillation

People become more vulnerable to various diseases as they age. Some of the conditions can be prevented effectively. The current case study focuses on a geriatric patient Mrs. A. who is 75 years old and has the arterial fibrillation. Besides, the woman has high blood pressure and diabetes mellitus type two. A detailed health assessment reveals that she is obese and suffers from osteoporosis. However, the patient does not understand the significance of managing her health because sometimes, she neglects taking medications, which can worsen her symptoms and make it difficult for her to prevent some chronic illnesses. Notably, she has arterial fibrillation, which is likely to have developed due to ineffective management of the blood pressure. According to Manolis et al. (2012), ineffective treatment approaches to managing hypertension can result in the arterial fibrillation. Therefore, this patient needs a comprehensive plan of care that will require improving her health-seeking behavior as she ages. It can help her manage the current diseases and prevent other chronic illnesses in the future. Therefore, it is imperative to conduct a comprehensive analysis of this case and prepare a care plan, which can offer a holistic approach to managing the health of Mrs. A.

Case Study Evaluation of the Atrial Fibrillation

Pathophysiology

The pathogenesis of the current diseases developed from the inadequate management of hypertension and consumption of alcohol. For instance, Cottrell (2012) argues that the atrial fibrillation can occur due to the presence of contributing factors that include both cardiac and non-cardiac causes. According to Cottrell (2012), the atria of the heart have a standard regulatory mechanism that is called the sinoatrial node, which generates impulses that maintain a regular pace of the heart. Cottrell (2012) further ascertains that because of cardiac causes of the atrial

fibrillation such as hypertension, the heart tissue is damaged. Further, it begins generating other impulses that cause the irregular heartbeat. Furthermore, Cottrell (2012) contends that the alcohol acts as an accelerator for the atrial fibrillation. In the current case study, the patient has hypertension that she manages inadequately; she drinks alcohol, as well. These two factors are the most probable causes of the current atrial fibrillation that has worsened despite the woman's usual remedy, which is having a rest.

Signs and Symptoms

The symptom of the atrial fibrillation identified in the current case is the irregular and rapid heartbeat. The patient says that she has felt her heart racing for the past three weeks. According to Cottrell (2012), the irregular heartbeat occurs in such patients due to the ineffective functioning of a sinoatrial node that is supposed to maintain the regular pace of the heart. Carrara et al. (2015) further reiterate that in patients with the atrial fibrillation, chaotic and irregular heartbeats are inevitable because of the pacemaker experience of interference. Consequently, the atrial emptying is inadequate. With time, it can cause dizziness that a patient denies; thus, it indicates that the disease has not advanced to the inadequate atrial emptying.

Progression Trajectory

The atrial fibrillation can occur in young people, but its risk increases when one ages. The Centers for Disease Control and Prevention [CDC] (2015) ascertains that when people age, they become vulnerable to many cardiovascular diseases, which act as risk factors for the atrial fibrillation. The CDC (2015) further asserts that the increasing prevalence of cardiovascular diseases has also caused more cases of the atrial fibrillation. The CDC (2015, p.1) provides statistics, which shows that currently, the prevalence of the atrial Fibrillation in the United States is 2% in people below 65 years of age and 9% in people above 65 years of age. Furthermore, the

CDC (2015) argues that the ethnicity is a determining factor in the prevalence of the disease. For instance, the prevalence of the atrial fibrillation in African Americans is small as compared to European Americans. Finally, Colilla et al. (2013, p.1144) argue that the incidence of the disease is up to 1.2 million cases in the United States. Colella et al. (2013, p. 1144) further project that the incidence of the atrial fibrillation is likely to increase and reach 2.6 million in 2030.

Therefore, the healthcare system must identify appropriate measures for reducing the prevalence of this disease. The patient in the current case scenario is a white woman over 65 years of age; in addition, she has hypertension, which increases her risk of developing the atrial fibrillation.

Accordingly, the current case is justified based on the available statistics.

Diagnostic Testing

The first approach to diagnosing the atrial fibrillation is by looking at the signs and symptoms. Cottrell (2012) indicates that the disease causes the increased heart rate that is irregular; Mrs. A. has this symptom. Additionally, Cottrell (2012) asserts that analyzing such risk factors as hypertension and alcohol intake is crucial; they are present in the current patient. Therefore, the history of Mrs. A. contains the reliable information that a doctor or nurse can use in diagnosing. Additionally, a healthcare provider can use electrocardiogram and echocardiogram in order to study her heart rate. According to Manolis et al. (2012), electrocardiogram allows a healthcare provider to record electrical signals, which travel through the heart muscle as the heart beats. Manolis et al. (2012) advocate this approach as the primary tool for the atrial fibrillation diagnosing. However, Manolis et al. (2012) argue that in patients with hypertension such as Mrs. A, an echocardiogram is also a practical approach because healthcare providers can get images of the heart rate through the sound waves, which can enable identifying the atrial fibrillation quickly. Therefore, in the current patient, the health history,

echocardiogram, and electrocardiogram can provide crucial information that can contribute to a proper diagnosis of the condition.

Treatment Options

The treatment for Mrs. A can begin by analyzing the length of the arterial fibrillation and severity of her symptoms. However, she is not sure how long she has had the symptoms, which she says were mild previously. Currently, the irregularity of the heart rate lasts for an hour. Manolis et al. (2012) assert that in such cases, a patient might develop blood clots that can cause stroke, which can increase the risk of death. Therefore, in this case, the goal of the treatment is to control the heart rate of Mr. A and prevent any blood clots; thus, her quality of life can be increased. January et al. (2014) provide guidelines, which indicate that the cardioversion with drugs can prevent the heart from pumping irregularly and abnormally. The use of anti-arrhythmic medicines in this type of treatment can significantly restore the sinus rhythm. Therefore, a healthcare provider can give *dofetilide* depending on the drug tolerance and current weight of the patient since she is aged. In line, January et al. (2014) recommend *warfarin* for preventing blood clots, which can help avoid instances of stroke, thus, facilitating recovery. These simple approaches to managing the disease in Mrs. A. are appropriate because the disease is yet to advance.

Difference between the Current Disorder and the Normal Development

In the current case study, the disorder has developed due to the risk factors that include the old age, hypertension, and alcohol intake. However, the disease usually begins in the tissues of the heart. For instance, although Cottrell (2012) indicates that the condition commonly occurs due to underlying diseases, the author further confirms that the heart tissue can generate new impulses, thus leading to the stretching and relaxing of the cardiac muscle and increasing the

pressure in atria. In its turn, the increased pressure in atria exerts more pressure on the pulmonary veins and influences the sinoatrial node, thus affecting the normal pace of the heart. Cottrell (2012) indicates that the electrolyte imbalance can also contribute to the ineffective electrical conduction. Minerals play a significant role in the nervous conductivity; thus, their deficit can lead to the irregularity in the normal pace of heart. In line, Cottrell (2012) explains that patients can experience the shortness of breath, fatigue, and faintness. However, in the current case, the patient denies any of these symptoms. Therefore, a healthcare provider must treat the condition quickly in order to avoid the development of the same.

Physical and Psychological Demands that the Atrial Fibrillation Lays Down on Mrs. A and Her Family

The first physical demand that the disease lays down on Mrs. A is the inadequate performance of her routine activities. According to Aliot, Botto, Crijns, and Kirchhof (2014), the atrial fibrillation can limit activities of daily living because of the physical concerns, including dizziness and chest pain, which it causes in patients. In this case, the patient denies the chest pain and dizziness but confirms that she usually has to sit down in order to alleviate the symptoms. For instance, she has to rest for an hour after washing her face and brushing her teeth. She could have used this time to perform her daily chores. Aliot et al. (2014) argue that mentally, the atrial fibrillation causes some psychological distress. It occurs as patients develop emotions, which help them seek the remedy or treatment promptly. In this case, Mrs. A has been sitting for an hour trying to reduce the symptoms without success; this situation made her seek help immediately. Although the personal history indicates that the woman denies anxiety, her comments about anticipated exorbitant hospital bills and prompt seeking of treatment show that she is psychologically disturbed.

The case scenario does not provide any explanation about the relationship of her family members to the disease. However, her inability to perform routine activities comfortably leads to a deficit in her household, which can force her husband to handle house chores on his own since they live together. Additionally, the husband and children must be worried about managing Mrs. A because she does not have a proper insurance coverage.

Information to Be Explained to the Family and the Patient for Managing the Disorder

Both the family and the patient should understand the severity of the disease, its pathogenesis in Mrs. A., and associated risk factors. A healthcare provider can advise her to come with her husband and start with teaching both about the danger of the atrial fibrillation in order to make them interested in learning about the disease. For instance, a doctor or nurse can talk about such issues as the incidence of the illness, which is currently 2 million, and its projection of 2.6 million by 2030 (Colilla et al., 2013, p. 1144). Additionally, a healthcare provider can explain the increasing risk of developing the disease as one ages and provide the current statistics about the risks.

Later, Mrs. A. and her family can get information regarding the pathogenesis of the illness. A nurse should focus on risk factors of the disease, particularly hypertension and alcohol intake because they make the heart lose its normal functions and beat irregularly. Notably, the patient neglects to take her medications; this fact can delay the recovery from the abnormal blood pressure that is a risk factor for the development of the atrial fibrillation. In addition, the woman consumes alcohol that can trigger the condition (Cottrell, 2012). Therefore, the nurse should explain these two risk factors and urge Mrs. A to take her blood pressure medications properly and limit or give up the alcohol intake for her recovery to come.

Interdisciplinary Team for Treating Mrs. A

Members of a healthcare team that can manage Mrs. A. efficiently include a doctor, a nurse, a dietitian, and a cardiologist. The doctor should study the history of Mrs. A. and come up with a correct diagnosis based on the history, as well as recommend additional tests if required. For instance, the case indicates that the patient has palpitations and hypertension. The doctor has to consider this information in planning diagnostic tests, for example, the electrocardiogram and further prescribing medications that can be crucial for controlling the heart rate and preventing such complications as blood clots and stroke.

The nurse is responsible for conducting a complete nursing history and equally coming up with nursing diagnoses that can be instrumental in caring for the patient symptomatically. For example, the patient complains of palpitations that occur despite having some rest. The nurse can assess further triggers of the atrial fibrillation and initiate such interventions as the drug administration and education about the abstinence from alcohol, which can be useful in enhancing favorable clinical outcomes for Mrs. A. According to Zakerimoghadam, Ghiyasvandian, and Leili (2015), collaborative efforts of a nurse and doctor can significantly improve results of the treatment due to merging necessary procedures. It is beneficial to apply this evidence to managing Mrs. A., because a nurse can conduct nursing procedures while adhering to the doctor's recommendations that can improve the life of the woman.

Finally, a dietitian can advise Mrs. A. on an appropriate diet, while a cardiologist is responsible for referral purposes in this case. According to Pennella, Farinetti, and Mattioli (2015), a diet with such stimulants as caffeine can worsen the health outcomes of patients that suffer from the atrial fibrillation. Dietitians can emphasize the importance of avoiding such food and consuming healthy ones that can guarantee good clinical outcomes. In turn, a nurse can refer

the patient for the further analysis by the cardiologist in order to determine any additional interventions.

Facilitators and Barriers to the Optimal Management of the Atrial Fibrillation in Mrs. A

This case has some barriers that can prevent the proper treatment, as well as some facilitators that can enhance the disease management. Regarding the barriers, the patient does not understand the significance of managing her high blood pressure; it is an indication that she has limited knowledge on the potentiality of it to cause the atrial fibrillation. For instance, in the case scenario, the woman fails to take medications for her blood pressure appropriately despite her previous episodes of palpitations. Additionally, the case scenario shows that she failed to visit a dietitian despite having diabetes mellitus type two. This evidence from the case scenario demonstrates that the patient has poor health seeking behavior that can affect her health outcomes.

However, the case scenario has some facilitators to the efficient management of the disease. First, according to the data, the patient tried some remedies to manage her atrial fibrillation, which failed; thus, she decided to attend the hospital for the further treatment. This attendance can ensure that she gets professional help. Additionally, the case indicates that finally, she has agreed to see a dietitian. The dietitian can not only help her understand the food that she should consume in order to manage her atrial fibrillation but also understand the food she is supposed to eat in order to improve her general health. Finally, Mrs. A has started a walking program, which is useful because it has already allowed her to lose eight pounds. According to Bosomworth (2015), the physical exercise is essential to atrial fibrillation patients because it increases the general wellbeing and reduces chances of mortality. Therefore, Mrs. A. has

enhanced her chances of having better health outcomes despite the presence of multiple chronic illnesses.

Strategies for Overcoming the Barriers

The patient education is considered the most appropriate approach to removing barriers in this case. For instance, if Mrs. A. usually forgets to take her drugs, a nurse can teach her about the importance of using the antihypertensive drugs for managing her blood pressure. The proper adherence to the medication plan can prevent the development of the atrial fibrillation and other potential outcomes such as death (Manolis et al., 2012). Additionally, a nurse should stress the importance of visiting healthcare providers on a regular basis with the view to getting reliable information regarding the management of her disease because she has not been using their services properly, particularly ones of a dietitian. Furthermore, a nurse should teach the patient about the integrated management of all chronic illnesses the woman has because she is at risk of focusing on managing the current condition and neglecting the others. Therefore, a nurse can encourage continuing with exercises and diabetic medications as she maintains the management of her weight, blood pressure, and the atrial fibrillation. Notably, education can enhance the health-seeking behavior in the patient and further facilitate the proper disorder management.

Care Plan Synthesis

Holistic Recognition and Planning for the Atrial Fibrillation in Mrs. A.

Holistic recognition of the atrial fibrillation in Mrs. A. focuses on identifying some risk factors, as well as the way the disease has affected her both physically and psychologically. According to the case study, Mrs. A. is obese, she has hypertension, and she consumes alcohol. Manolis et al. (2012) argue that obesity is one of the main contributing factors to the high blood pressure, which can put seniors at risk of developing the atrial fibrillation. Manolis et al. (2012)

further indicate that the consumption of alcohol exacerbates this condition. In this case, the patient has the atrial fibrillation with a detailed explanation of the risk factors; thus, a healthcare provider can associate the current diagnosis with the existing risk factors. In turn, a healthcare provider should focus on both subjective and objective data of Mrs. A. in order to identify the physical and psychological effects of the disease. In this case, the patient says that she does not know exactly when the disease began. She is also unaware of the time, for which the condition has persisted. However, she has experienced symptoms on several occasions; this morning, symptoms have lasted for an hour despite employing her natural approaches to mitigating them. Psychologically, Mrs. A is worried about the cost of managing the disease. This information is useful in recognizing and judging the severity of the atrial fibrillation in the woman.

In this case, the holistic planning must involve the woman in designing a practical approach that will be patient-friendly. The nurse should inform Mrs. A. about available therapeutic strategies and recommend interventions that she can find comfortable and appropriate for her physical and psychological health. In this case, the patient has a walking program to help her lose weight, and she does not have an intolerance to any medications. However, she is yet to begin medications for the atrial fibrillation. Thus, a nurse can plan with her a continuing program for walking and adhering to anti-hypertensive medications. Then, a nurse can prepare a schedule of using drugs for the atrial fibrillation while considering the time that would be comfortable for her. These measures can promote the drug compliance.

Socio-Cultural Background and Potential Influence on the Optimal Management of the Atrial Fibrillation in Mrs. A

The cultural background of the patient is not described in details. However, the social history can create significant challenges for managing the disease. For instance, in this case, Mrs.

A. lives with her husband who is 76 years old. Children live in other states, and they visit their parents two times a year. Notably, Mrs. A. has not been adhering to her medication plan despite the presence of her husband. Therefore, she is unlikely to start doing the same unless a nurse emphasizes the importance of following the drug regimen. Additionally, the presence of children can be significant because they would remind her of the drug intake. According to Yap, Thirumoorthy, and Kwan (2016), the medication plan adherence is a challenge for the elderly, particularly those that have chronic illnesses. Yap et al. (2016) further assert that healthcare providers must recognize old age as an indicator of the potential poor adherence to medications. Therefore, this issue is a risk factor that can prevent the proper management of this disease. Further, the social history indicates that the patient consumes alcohol two times a week. This lifestyle can potentially affect the optimal disorder management because alcohol triggers the atrial fibrillation (Manolis et al., 2012). These three aspects of the woman's social life: old age, lack of proper connection with their children, and alcohol consumption, can present significant challenges to managing the disease if the healthcare provider does not address them adequately.

The Evidence-Based Approach to Managing Key Issues in the Case Study

According to the case study, the critical issues include hypertension, obesity, osteoporosis, diabetes mellitus type 2, and atrial fibrillation. A healthcare provider must possess reliable evidence in order to manage these conditions appropriately. According to Tadic and Cuspidi (2015), type two diabetes mellitus, obesity, and hypertension can coexist and further lead to the atrial fibrillation. In such a case, Tadic and Cuspidi (2015) recommend the use of antihypertensive medications with the view to reducing the blood pressure, utilization of anti-diabetic drugs for managing diabetes, control of the heart rate for treating the atrial fibrillation, and use of warfarin for preventing such complications as stroke. In this case, the patient is using

lisinopril for blood pressure, and metformin 500mg bid together with amaryl 12mg OD for diabetes mellitus. Currently, she needs dofetilide in order to maintain her heart rate at a constant pace and warfarin in order to prevent a stroke that can occur due to blood clots (January et al., 2014). Additionally, Jackuliak and Payer (2014) argue that patients with diabetes mellitus have reduced levels of vitamin D that often causes osteoporosis, which can result in the easy fracture of bones in obese patients. Therefore, in this case, a healthcare provider can administer vitamin D, which can be instrumental in strengthening the woman's bones, thus, facilitating exercise for reducing the weight. These measures can be useful considering that the available evidence supports their credibility.

A Comprehensive and Tailored Approach to the Atrial Fibrillation Management

A comprehensive and adequate management of the atrial fibrillation in Mrs. A. involves focusing on treating the disease and minimizing all risk factors for the disease. In such a manner, the patient can cure of the atrial fibrillation and have minimal chances of having it in the future. In this case, a significant risk factor is hypertension (Manolis et al., 2012). According to the case study, the patient does not manage her hypertension correctly, and she takes alcohol twice a week; thus, this behavior puts her at risk of experiencing subsequent episodes of the atrial fibrillation. Indeed, she confirms to suffer such episodes repeatedly. Therefore, using the evidence-based approach, a healthcare provider can prescribe *dofetilide* based on her current weight in order to treat the disease. However, a healthcare provider must insist on the proper adherence to antihypertensive drug plan and abstinence from alcohol. Then, a healthcare provider must schedule specific return dates for monitoring the disease and therapeutic effects of medications. A close monitoring of the condition and encouraging the patient to comply with

recommendations is a reliable approach to managing the atrial fibrillation in Mrs. A.; it can facilitate the recovery.

Conclusion

The prevalence of the atrial fibrillation is high due to the increasing number of its risk factors such as hypertension and alcohol intake. In the current case study, Mrs. A suffers from the high blood pressure, but she does not manage it well. Additionally, she consumes alcohol twice a week. Consequently, these risk factors have resulted in the atrial fibrillation. Although she has some other significant problems such as osteoporosis, obesity, and diabetes mellitus type two, the management of the atrial fibrillation is crucial for preventing the likelihood of developing stroke, which can lead to death. In this case, the most reliable approach is the patient adherence to appropriate drugs and continuous follow-up with the view to ensuring that the patient is making significant progress towards own recovery. However, a nurse must also encourage the management of other diseases in order to increase the general quality of life of Mrs. A.

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