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Non-Valvular Atrial Fibrillation and Stroke: Novel Oral Anticoagulants versus Vitamin K Antagonists

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Atrial fibrillation (AFib) is the most common sustained cardiac arrhythmia and occurs in adults in the United States (Zargari & Korn, 2012). It affects about 3 million people in the US, with a prevalence of 0.2 million affected cases, 2.2 million increased risk of stroke to 4 to 6 times (National Institute of Neurological Disorders and Stroke, 2015). Atrial fibrillation (AFib) is a common problem that occurs in adults in the United States. It affects about 3 million people in the US, with a prevalence of 0.2 million affected cases, 2.2 million increased risk of stroke to 4 to 6 times (National Institute of Neurological Disorders and Stroke, 2015).

Types of AFib are paroxysmal (less than 7 days), persistent (greater than 7 days), permanent (greater than 1 year), and multifocal. Ischemic stroke from plaque build up and rupture in arteries, leading to brain cells death (Zargari & Korn, 2012). AFib is a type of ischemic stroke that is caused either from plaque breaking off of an artery and going to the heart or from a blood clot that goes to an artery in the brain (Zargari & Korn, 2012). Hemorrhagic stroke occurs when increased pressure on the walls of the arteries of the brain. Risk factors for non-valvular stroke include AFib, atrial aneurysms, anticoagulation treatments (antiplatelet) as all causes of hemorrhagic stroke (Zargari & Korn, 2012).

### Implications in Nursing

- **Non-valvular atrial fibrillation** increases in prevalence with age and often requires medical treatment to prevent thromboembolic events. Patients with non-valvular AFib and stroke need anticoagulation treatment with warfarin.
- **Warfarin and new oral anticoagulants (NOACs)** for the management of AFib and stroke prevention.
- **Valvular atrial fibrillation** and stroke prevention.

### Stroke

- **Types of hemorrhages**: ischemic and hemorrhagic. Ischemic strokes include transient ischemic attacks (TIA) which are temporary blockages that does not leave permanent symptoms (Zargari & Korn, 2012). Ischemic stroke from plaque build up and rupture in arteries, leading to brain cells death. Hemorrhagic strokes occur when increased pressure on the walls of the arteries of the brain. Risk factors for non-valvular stroke include AFib, atrial aneurysms, anticoagulation treatments (antiplatelet) as all causes of hemorrhagic stroke (Zargari & Korn, 2012).

### Underlying Pathophysiology

- **Normal conduction of the heart**: Begins with electrical signal from sinus node (SA) node in the right atrium, spreads across right and left atria, causing blood fill to atria to contract and fill both ventricles (Zargari & Korn, 2012). Electrical signals pass at a rate below 50 beats per minute (BPM), which is termed AV delay, and AV nodal block (Zargari & Korn, 2012). Over the stimulation of atrial cells due to structural heart defects from heart diseases, atrial cells have more activity, more rapid, and ineffective contractions (Zargari & Korn, 2012).
- **Interruption of the conduction factors**: atrial fibrillation, atrial flutter, and atrial tachycardia. Atrial fibrillation causes rapid, irregular beats, and ineffective atrial contractions (Zargari & Korn, 2012). In atrial fibrillation, atrial cells have more activity, more rapid, and ineffective contractions (Zargari & Korn, 2012). Over stimulation of atrial cells due to structural heart defects from heart diseases, atrial cells have more activity, more rapid, and ineffective contractions (Zargari & Korn, 2012).
- **Implications in Nursing**: Non-valvular atrial fibrillation and stroke prevention. Non-valvular atrial fibrillation is in the absence of rheumatic heart disease, primary congenital heart disease, or other heart valve malformations (AVMs) are all atrial fibrillation and stroke prevention. Anticoagulation treatment with warfarin and new oral anticoagulants (NOACs) for the management of AFib and stroke prevention.
- **Valvular atrial fibrillation** and stroke prevention. Valvular atrial fibrillation and stroke preventions.

### Conclusion

- **Importance of knowing the pathophysiology of stroke and anticoagulation therapy**: Non-valvular atrial fibrillation and stroke prevention. Non-valvular atrial fibrillation is in the absence of rheumatic heart disease, primary congenital heart disease, or other heart valve malformations (AVMs) are all atrial fibrillation and stroke prevention. Anticoagulation treatment with warfarin and new oral anticoagulants (NOACs) for the management of AFib and stroke prevention.

### References