



## ATRIAL FIBRILLATION

**Underwriters often bring cases to me involving atrial fibrillation, and it presents a challenge to properly**

**perform risk assessment. This month I will discuss atrial fibrillation, a common cardiac condition. The right and left atrium receive blood from the peripheral circulation and pulmonary circulation respectively, and when contracting deliver an increased amount of blood into the ventricles, increasing their pumping efficiency. The atria contract on a regular basis, controlled by the primary pacemaker tissue, the SA node. Atrial fibrillation (AF) occurs when the regular atrial contractions are replaced by a rapid and irregular mechanism of chaotic atrial activation. Instead of beating synchronously with the ventricles, the atria simply fibrillate and fail to pump any blood into the ventricles. Holding a fibrillating atrium in your hand has been described as the same sensation one would get from holding a large number of very active earthworms.**

Although AF is itself a specific phenomena, more often it is a symptom of some other ongoing disease process. Atrial fibrillation is common. In one large community based population study of individuals 65 years of age and older, 9% were found to have atrial fibrillation if they had underlying cardiovascular disease, while 1.6% were found to have atrial fibrillation who were otherwise healthy individuals. Atrial fibrillation does increase with advancing age. Basically, atrial fibrillation occurs as two general types. There is paroxysmal atrial fibrillation (PAF), characterized by occasional episodes of atrial fibrillation interspersed with predominantly normal regular sinus rhythm. The other type is that of chronic or constant atrial fibrillation, in which this rhythm disturbance occurs constantly or almost constantly. PAF can occur

occasionally in otherwise normal hearts. Usually when this occurs, there is some type of overwhelming physiological stress. Examples include the post-operative state, fever or dehydration, an acute alcohol binge, or simply staying awake too long with significant sleep deprivation. In cases such as this, AF will not recur if the physiological stress does not recur.

The more serious type is that of chronic atrial fibrillation. In this case, it is important to identify the cause of the AF since it is the etiology that is the most important factor in terms of long-term mortality implications. As we stated before, AF is more likely to occur with physiological stress. Also, anything that causes an increase in the size of the left atrium will also predispose to AF. It is seen with a variety of cardiovascular diseases, including coronary artery disease, valvular heart disease, congenital heart disease (such as atrial septal defect), mitral valve prolapse, hypertension, various cardiomyopathies, and congestive heart failure of all types. When AF occurs in the setting of other cardiovascular disease, it is a marker of the severity of the underlying process, and by itself does not add further prognostic information more than the underlying disease does.

There is one type of chronic AF that may have a better prognosis. This has been referred to as “lone” atrial fibrillation. In lone atrial fibrillation, AF is present without any other identifiable type of heart disease or other physiological processes that would cause this rhythm disturbance. Individuals with lone atrial fibrillation have a much better prognosis than those with AF associated with heart disease.

As noted, usually the risk in AF relates to the severity of the underlying process, but atrial fibrillation by itself can also lead to some significant complications. AF does cause a decrease in the cardiac output, the pumping ability of the heart. As such, it may precipitate or worsen heart failure. The fibrillating atria also cause stagnation of blood within them, which then predisposes to clumping of platelets and the possibility of embolization. Embolization refers to these platelet clumps being carried out of the heart into the circulation, which can result in stroke. This risk of stroke is bothersome to treating physicians and to underwriters.

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Several treatment options are available for AF. Obviously, the best treatment would be to convert the AF back into a normal regular sinus rhythm. This can be done with medications or with cardioversion. If the underlying process is PAF, this treatment is usually successful and maintenance of sinus rhythm can be maintained in the future. Occasionally medications are necessary to help maintain the sinus rhythm in the future. However, in chronic atrial fibrillation, it is difficult to convert to sinus rhythm despite medications and cardioversion.

In situations such as this, several steps can be taken to improve the prognosis. Since AF is a very rapid irregular rhythm, medications are given to slow the ventricular rate, enabling the ventricles to pump stronger. Also, anticoagulation can be given in an effort to decrease the risk of stroke. Anticoagulation can be as simple as an aspirin tablet per day, or can involve the more potent and potentially dangerous anticoagulant warfarin (Coumadin). More potent anticoagulation with warfarin is recommended if the AF is associated with hypertension, prior stroke, valvular heart disease, age greater than 75, diabetes, large left atriums, and those with congestive heart failure. Although the anticoagulation effect is more pronounced with warfarin than

with aspirin, there is also increased danger of bleeding from the warfarin. Another form of treatment that is available is the use of pacemakers, which sometimes can control the ventricular rate if medications are ineffective.

From the underwriting standpoint, PAF usually is a benign process and would not be ratable. If PAF is associated with some type of underlying disease, any rating would be based upon that underlying disease. The entity of lone atrial fibrillation is close to a standard risk. However, chronic atrial fibrillation must be carefully underwritten. It is necessary to identify the type and severity of the underlying cardiovascular disease, and any rating is usually based upon this disease process. AF in this setting may add a slight increased risk, mainly from that of stroke.

So you can see, if a proposed insured has a history of atrial fibrillation, this does not necessarily mean an adverse underwriting decision. It means the underwriter has to investigate further, especially obtaining cardiac records. If the process is PAF, it can usually be a standard risk. I would be happy to answer any questions regarding atrial fibrillation or any other questions that you may have. If there is a particular topic that you like to be addressed in FYI, please let me know.