

Keeping the rhythm of life in sync

28 May 2008

Beyond symbolically holding our feelings of love and compassion, the heart is a very efficient pump with a steady beat that provides the rhythm of life. Abnormal rhythm in the heart is a condition known as cardiac arrhythmia. A normal heart beats between 60 and 100 times per minute. It goes faster if needed for exercise or to handle emotional or physical stress.

The heart beat is regulated by a complex and specialized electrical system that runs through the heart muscle. The muscle itself is indeed electrically active. Alterations in the normal electrical system of the heart and its regulatory mechanisms lead to arrhythmias. These could be too fast, too slow, or irregular.

All forms of arrhythmia can cause problems. Patients with abnormal heart rhythms can suffer a variety of health issues. Different people may experience arrhythmias in different ways. Some may have an abnormal rhythm and not even know it.

Fatigue, dizziness, lightheadedness, palpitations, heart racing, chest pressure, fainting spells, episodic blurry vision, shortness of breath, swelling of the legs, strokes, heart attacks or sudden death can occur because of abnormal heart rhythm.

To evaluate the electrical system of the heart and identify its relation to the symptoms patients may have, physicians use an electrocardiogram. This diagnostic test allows us to look in real time at the graphic tracing of the electrical activity of the heart by placing electrodes on the skin.

Most commonly, the arrhythmias occur intermittently and it may be difficult to catch an episode with an electrocardiogram. In this case, other tests may be ordered. One is an electrophysiology study, in which electrodes are placed inside the heart through a form of heart catheterization.

Cardiologists with rigorous training in the specialty

of electrophysiology can treat rhythm disorders with drugs, catheters, or implantable devices. Catheter ablation is the procedure that allows doctors to thread a catheter through veins in the groin to areas inside the heart where abnormal electrical connections or scar tissue are causing arrhythmias. The catheter then delivers heat or freezing temperatures to these abnormal areas, and tissue is selectively destroyed to prevent the recurrence of the arrhythmia.

Implantable devices are sometimes needed to stimulate the heart when the natural pacemaker or the heart's electrical system is not functioning and the heart beats too slow. More complex pacemakers can be used in selected patients with a weakened heart muscle to resynchronize the beating of the chambers of the heart and restore some of its pumping function.

Implantable defibrillators can save lives when patients at risk of dangerous arrhythmias collapse from a rhythm that is too fast. The device, a small implantable computer, identifies the abnormality and delivers an electrical shock to restore the normal rhythm.

Correcting abnormal heart rhythms can relieve discomfort, prevent disability, prolong life, and frequently allows patients to go back to their normal daily living. Penn State Hershey Heart and Vascular Institute has a team of heart rhythm specialists and the most advanced treatments available to help restore the heart rhythm ... to help restore the rhythm of life.

For more information, visit www.pennstatehershey.org/rhythm

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