CRIMEA STATE MEDICAL UNIVERSITY

CLASS-15

PHYLOGENIC DISORDERS OF HEART

GUIDED BY: MISS ANNA

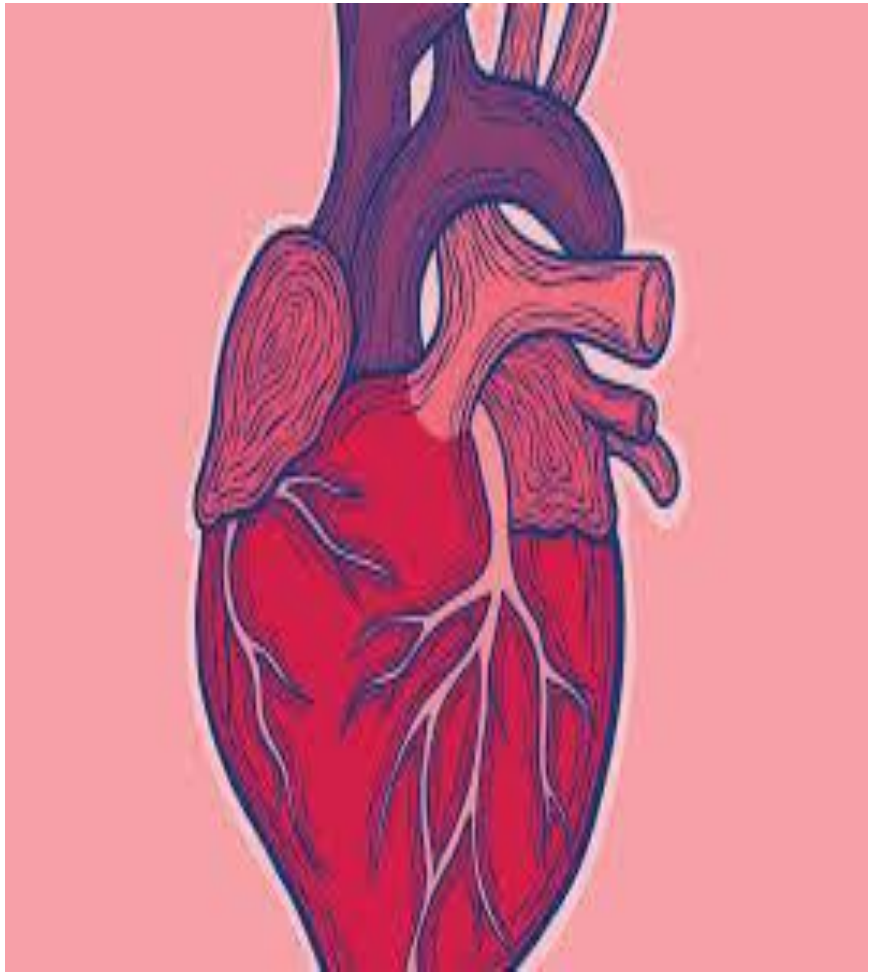
PRESENTED BY : VASU

WHAT IS PHYLOGENETICS?

- *Phylogenetics is the study of evolutionary relationships among biological entities - often species, individuals or genes*
- *It is based on the phylogenetic hypothesis that all living organisms share a common ancestry. The relationships among organisms are depicted in what is known as a phylogenetic tree.*
- *the phylogeny shows the evolutionary history of the individuals. This*
- *concept also makes sense for sequences coming from the same individual, as in our case of using phylogeny*
- *for reconstructing the haplotype sequences from genotypes*

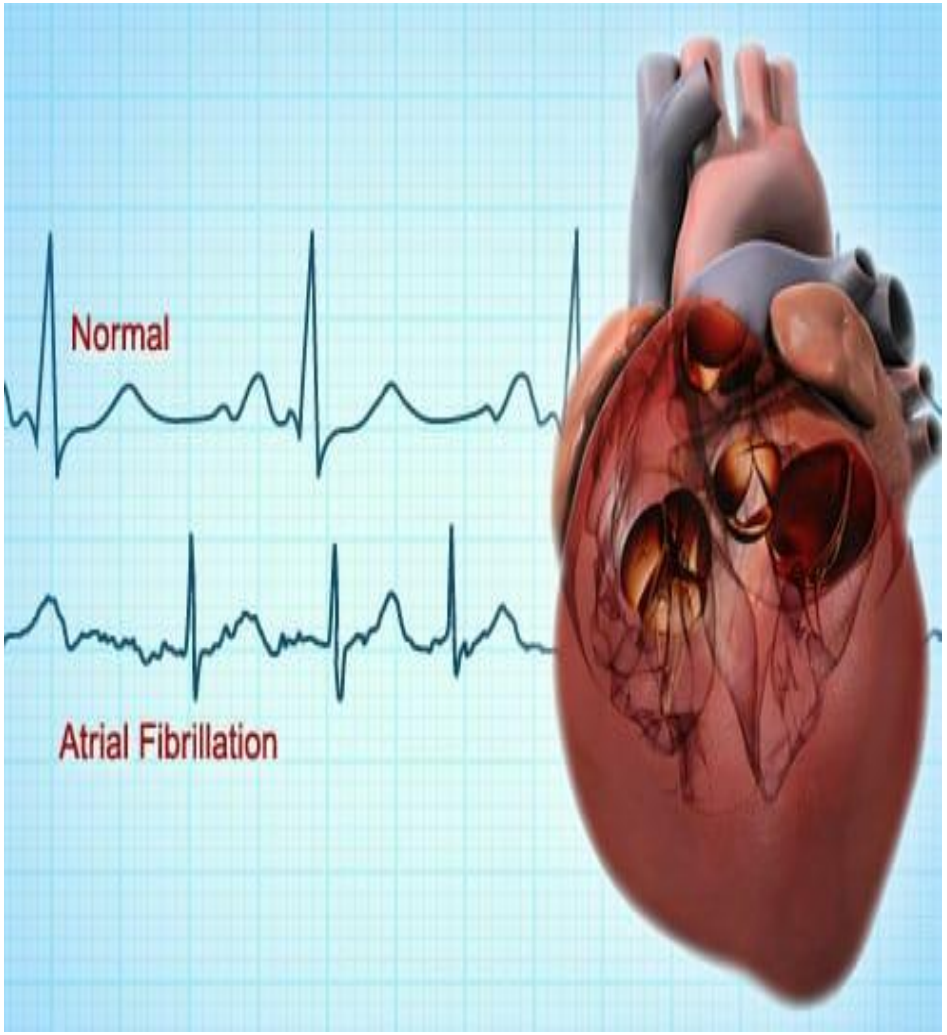
PHYLOGENETIC HEART DISORDERS OF HEART

- *arrhythmias,*
- *congenital heart disease,*
- *cardiomyopathy,*
- *high blood cholesterol*
- *There are a number of inherited disorders that can cause arrhythmias and sudden cardiac death.*



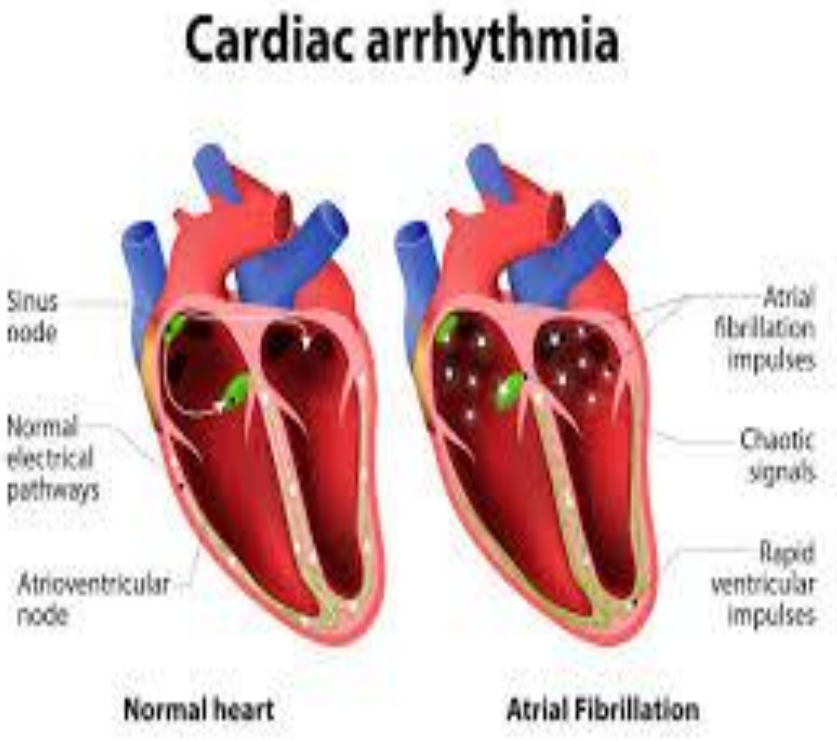
COMMON FACTORS OF ARRHYTHMIAS

- *Atrial fibrillation: a common arrhythmia that increases the risk for stroke*
- *Brugada Syndrome: a genetic disorder of the heart rhythm that can cause ventricular fibrillation and sudden cardiac arrest*
- *Long QT Syndrome: a prolonged electrical recovery phase (QT interval) of the heartbeat that can result in rapid, chaotic beats*
- *Short QT Syndrome: a shortened QT interval that can result in life-threatening arrhythmias*



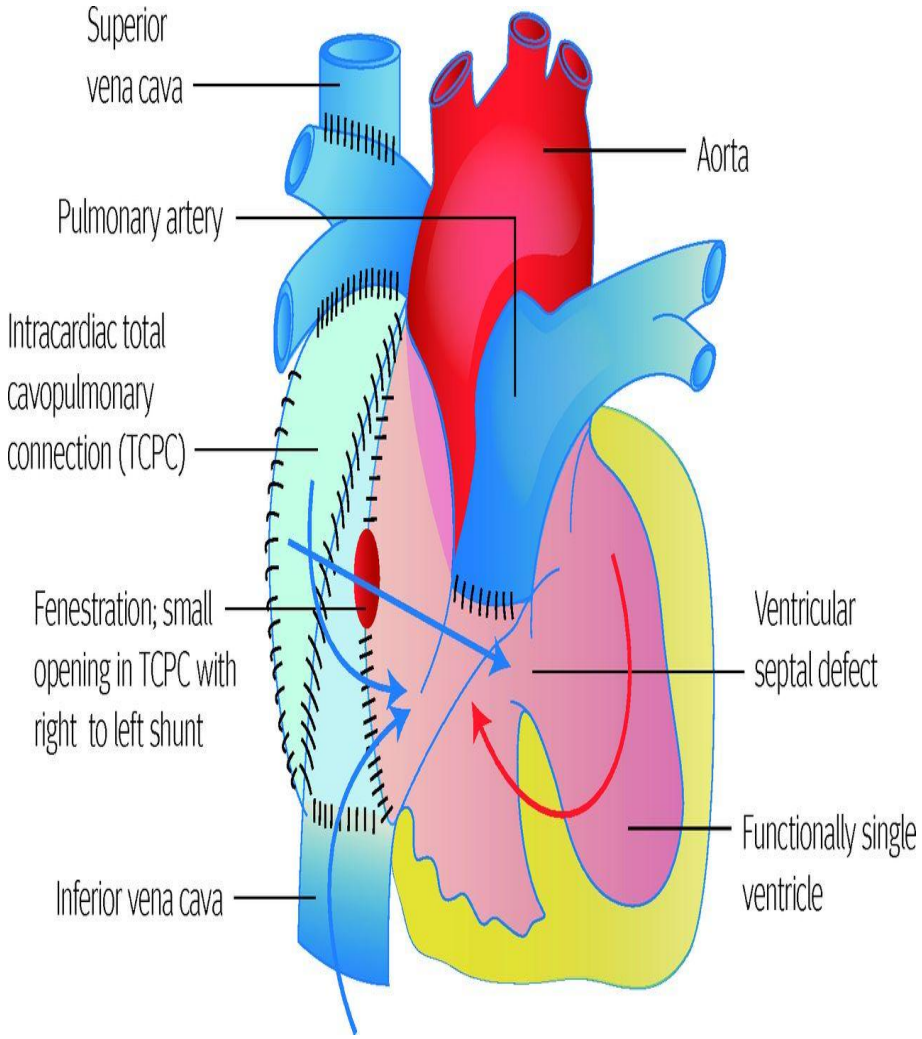
ARRHYTHMIA

- *An arrhythmia is a problem with the rate or rhythm of your heartbeat. It means that your heart beats too quickly, too slowly, or with an irregular pattern. When the heart beats faster than normal, it is called tachycardia.*



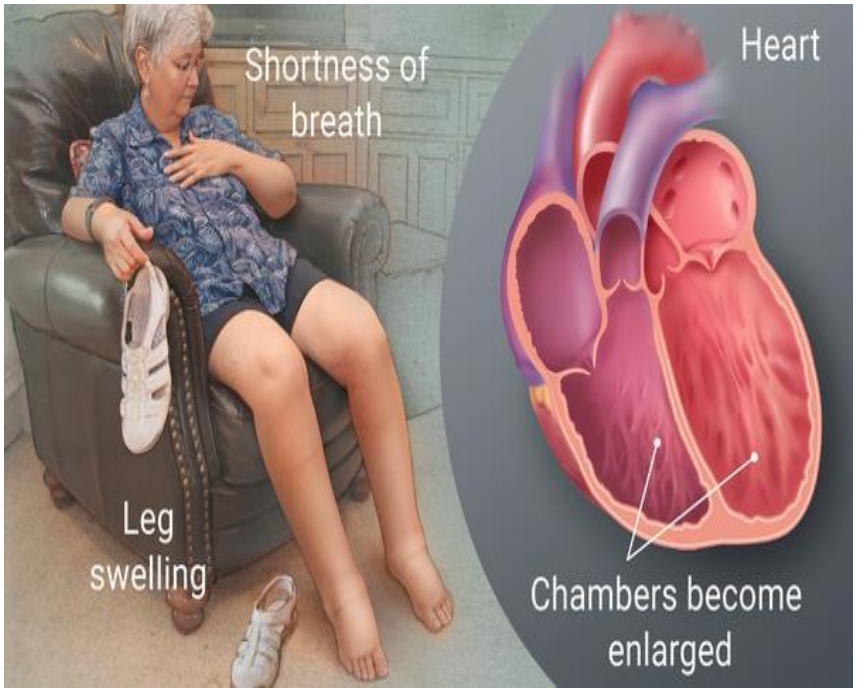
CONGENITAL HEART DISEASE

- ***Problems with genes or chromosomes in the child, such as Down syndrome.***
- ***Taking certain medications, or alcohol or drug abuse during pregnancy.***
- ***A viral infection, like rubella (German measles) in the mother in the first trimester of pregnancy***



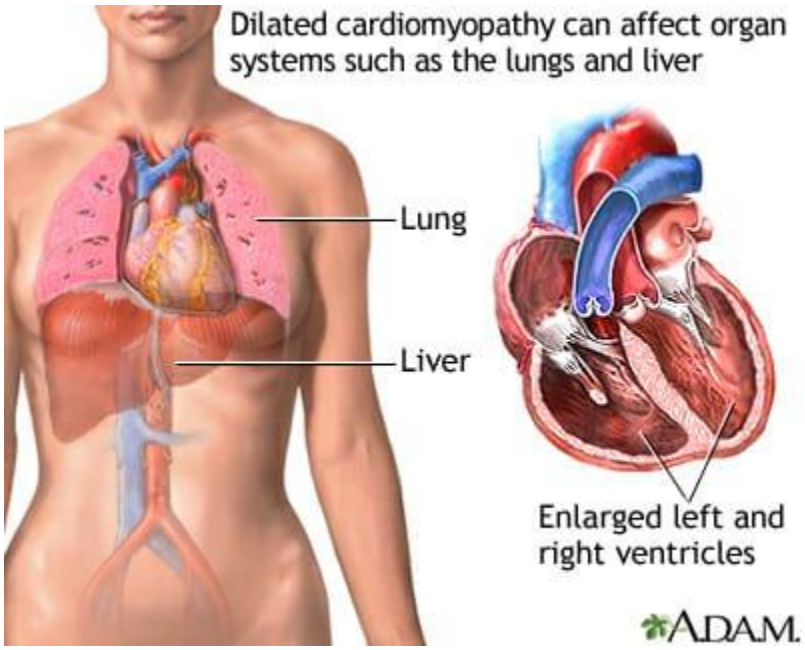
CARDIOMYOPATHY

- ***Cardiomyopathy is a disease of the heart muscle that makes it harder for your heart to pump blood to the rest of your body. Cardiomyopathy can lead to heart failure. The main types of cardiomyopathy include dilated, hypertrophic and restrictive cardiomyopathy.***



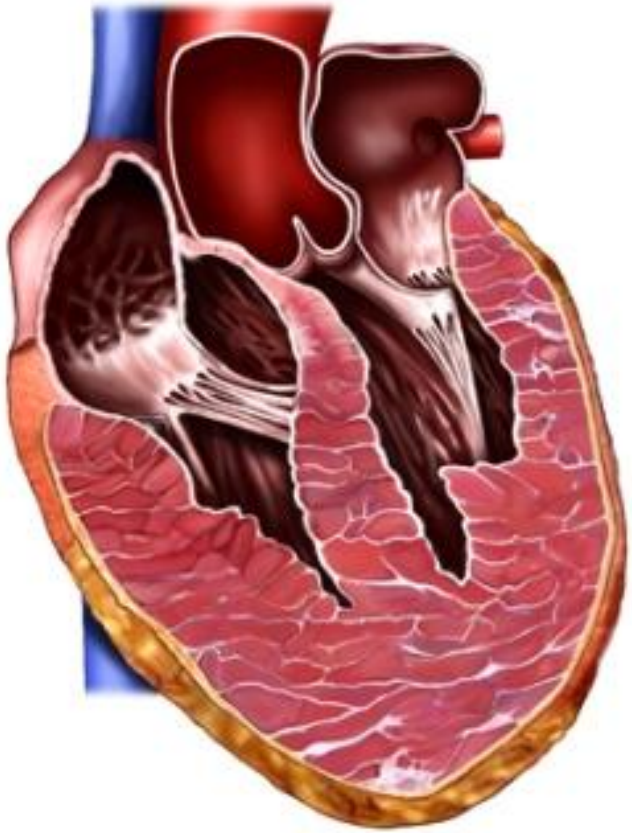
DIAGNOSIS OF CARDIOMYOPATHY

- *Shortness of breath or trouble breathing, especially with physical exertion*
- *Fatigue*
- *Swelling in the ankles, feet, legs, abdomen and veins in the neck*
- *Dizziness*
- *Lightheadedness*
- *Fainting during physical activity*



HYPERTROPHIC CARDIOMYOPATHY

Normal heart
(cut section)



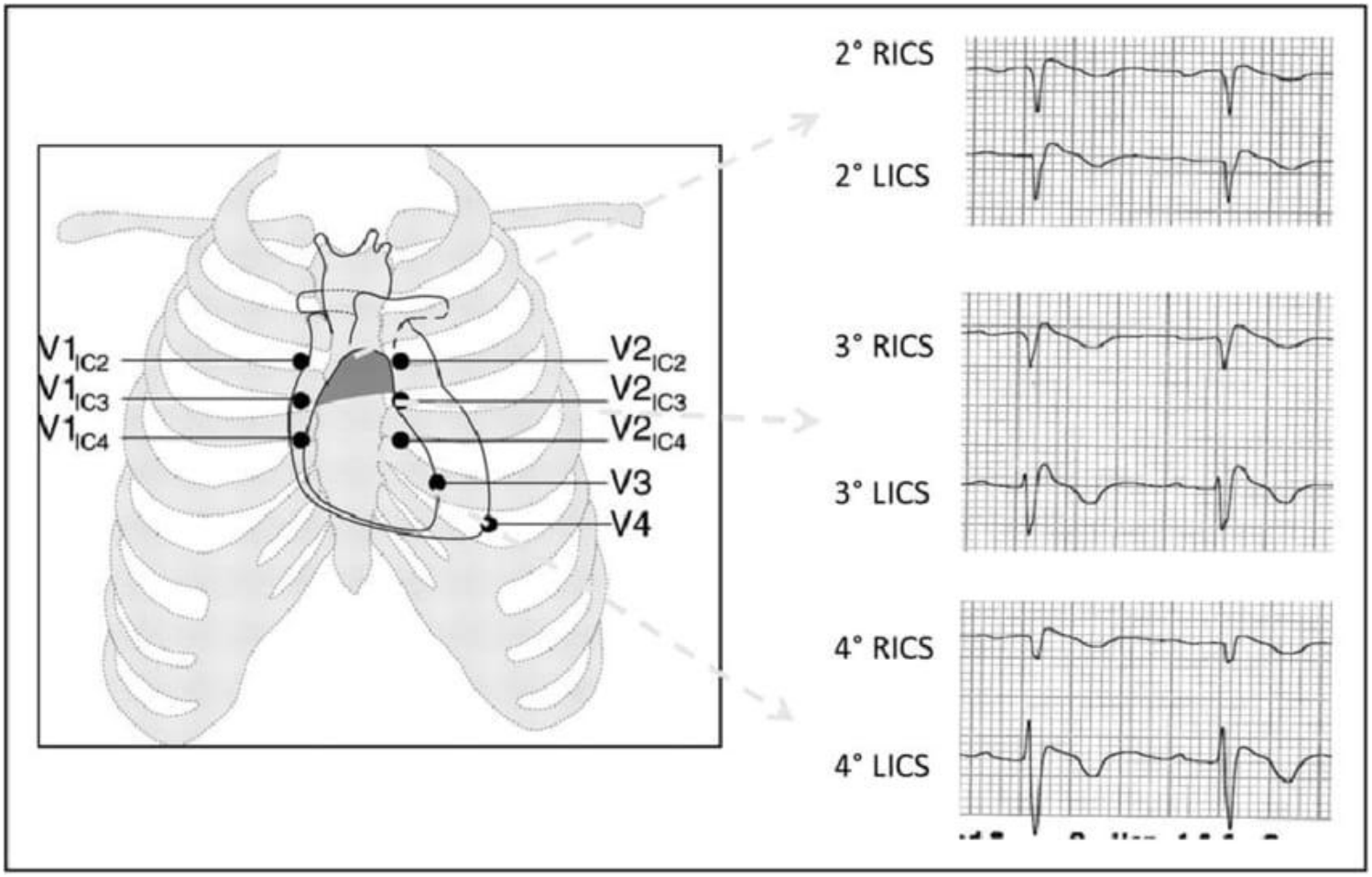
Hypertrophic
cardiomyopathy

BRUGADA SYNDROME

- Brugada syndrome is a genetic disorder in which the electrical activity within the heart is abnormal. It increases the risk of abnormal heart rhythms and sudden cardiac death.

- The abnormal heart rhythms seen in those with Brugada syndrome often occur at rest. They may be triggered by a fever.

BRUGADA SYNDROME



CATECHOLAMINERGIC POLYMORPHIC VENTRICULAR TACHYCARDIA

- *Catecholaminergic polymorphic ventricular tachycardia is a condition characterized by an abnormal heart rhythm . As the heart rate increases in response to physical activity or emotional stress, it can trigger an abnormally fast and irregular heartbeat called ventricular tachycardia.*
- *Polymorphic Ventricular Tachycardia. Polymorphic VT associated with a normal QT interval is most often caused by acute ischemia or infarction and may rapidly degenerate into VF.*

LONG QT SYNDROME

- *Long QT syndrome (LQTS) is a condition in which repolarization of the heart after a heartbeat is affected. It results in an increased risk of an irregular heartbeat which can result in fainting, drowning, seizures, or sudden death. These episodes can be triggered by exercise or stress.*
- *Causes: Genetic, certain medications, low blood*
- *Symptoms: Fainting, hearing loss, seizures*
- *Treatment: Avoiding strenuous exercise,*

SHORT Q-T SYNDROME

- *Short QT syndrome is a very rare genetic disease of the electrical system of the heart, and is associated with an increased risk of abnormal heart rhythms and sudden cardiac death.*
- *The syndrome gets its name from a characteristic feature seen on an electrocardiogram (ECG) – a shortening of the QT interval*
- *Short QT syndrome is a genetic disorder caused by mutations in genes responsible for producing certain ion channels within heart cells. It appears to be inherited in an autosomal dominant pattern*