

12. TACHYCARDIA ^{1,2}

Definition

A heart rate exceeding 100 beats per minute.

Classification

A tachycardia can be either physiological (normal response) or pathological. Examples of a physiological tachycardia are during exercise, in pregnancy or in situations of anxiety or excitement (“flight, fright, fight”).

A pathological tachycardia can be due to either a primary cardiac abnormality or a non-cardiac factor. Non-cardiac factors may include anaemia, over-activity of the thyroid gland or chronic liver disease. In these situations the heart itself is normal and is purely responding to increased “demand” due to other abnormalities.

Tachycardia of primary cardiac origin is best classified according to the site of origin of the electrical activity generating the heart rhythm.

There are four chambers in the heart with the two upper chambers (atria) being electrically connected to the lower chambers (ventricles) via an atrio-ventricular node (AV node). The electrical impulse is normally generated by the sino-atrial node (SA node), situated in the right atrium.

Tachycardia can be divided as follows:

- *Tachycardia originating in the atria:*
 - Sinus tachycardia
 - Atrial tachycardia
 - Atrial flutter
 - Atrial fibrillation
- *Tachycardia originating in the AV nodes:*
 - Re-entry tachycardia
- *Tachycardia originating in the ventricles:*
 - Sustained ventricular tachycardia
 - Non-sustained ventricular tachycardia

Symptoms

Individuals with tachycardia can present with a variety of symptoms. Most appear well and unaware of their tachycardia but symptoms can include:

- Shortness of breath
- Palpitations
- Chest tightness or pain
- Dizziness or being light-headed
- Collapse
- Passing large volumes of urine

Tachycardias of ventricular origin tend to be symptomatic more often.

Management

If tachycardia is suspected investigations are conducted to diagnose the exact nature, as treatment depends on the type of tachycardia. Tests may include resting ECG, 24 hour ECG recording, exercise ECG and in some rare cases invasive electrophysiological studies.

The patients may also need investigations to look for other heart disease causing tachycardia (e.g. high blood pressure, coronary artery narrowing).

Obviously non-cardiac causes of tachycardia also need to be investigated (e.g. thyroid disease).

Treatment is mostly by medication (e.g. beta-blockers) but in some cases may require radio-frequency ablation or implantation of pacemakers or defibrillators. Other factors contributing to heart disease also need addressing.

¹ The following medical information has been kindly provided by CRY and is available for download in the website: <http://www.c-r-y.org.uk>

² The medical information contained in this website is provided for information only. It is not intended to replace a consultation with an appropriately qualified medical practitioner and should not be used for the diagnosis, treatment or management of a heart abnormality. If you would like more information or are concerned that you might be affected by any of the conditions described in this website you should seek professional medical help and/or consult your doctor.