



Glossary of Cardiology Terms

Ablation – The removal, isolation or destruction of cardiac tissue or conduction pathways involved in arrhythmias.

Algorithm – A set of precise rules or procedures programmed into a pacemaker or defibrillator that are designed to solve a specific problem.

AntiTachycardia Pacing (ATP) – Short, rapid, carefully controlled sequences of pacing pulses delivered by an ICD and used to terminate a tachycardia in the atria or ventricles.

Arrest (Cardiac) – Cessation of the heart's normal rhythmic electrical and/or mechanical activity which causes immediate haemodynamic compromise.

Arrhythmia – Any heart rhythm that falls outside the accepted norms with respect to rate, regularity, or sequence of depolarisation. (Any abnormal or absent heart rhythm.)

Atrial fibrillation (AF) - Very fast, disorganised heart rhythm that starts in the atria.

Atrial Flutter (AFL) - Fast, organised atrial rhythm.

Atrial Tachycardia (AT) — A rapid heart rate that starts in the atria (includes AF, and AFL)

Atrioventricular (AV) Node – A section of specialised neuromuscular cells that are part of the normal conduction pathway between the atria and the ventricles. (A junction that conducts electrical impulses from the atria to the ventricles of the heart.)

Atrioventricular (AV) Synchrony – The normal activation sequence of the heart in which the atria contract and then, after a brief delay, the ventricles contract. The loss of AV synchrony can have significant haemodynamic effects. Dual chamber pacemakers are designed to attempt to maintain AV synchrony.

Atrium - The heart is divided into four chambers. Each of the two upper chambers is called an atrium. (Atria is the plural form of atrium.) Either of the two upper chambers of the heart, above the ventricles that receive blood from the veins and communicate with the ventricles through the tricuspid (right) or mitral (left) valve.

Bradycardia (Bradyarrhythmia) – A heart rate that is abnormally slow; commonly defined as under 60 beats per minute or a rate that is too slow to physiologically support a person and their activities.

Cardiac Arrest—Failure of the heart to pump blood through the body. If left untreated, it is dangerous and life-threatening.

Cardioversion – Termination of an atrial or ventricular tachyarrhythmia (other than ventricular fibrillation) by a delivery of a direct low energy electrical current which is synchronised to a specific instant during the heart beat (during to the ventricular depolarisation). Synchronisation of the shock prevents shocking during periods which could cause ventricular fibrillation.

Chronic lead – A pacemaker or ICD lead which has been implanted in the past.

Chronotropic incompetence – The inability of the heart to increase its rate appropriately in response to increased activity or metabolic need, e.g., exercise, illness, etc.

Class I antiarrhythmic drugs – Drugs which act selectively to depress fast sodium channels, slowing conduction in all parts of the heart (*e.g. Quinidine, Procainamide, Flecainide, Encainide, Propafenone*)

Class II antiarrhythmic drugs – Drugs which act as beta-adrenergic blocking agents (*e.g. Propranolol, Metoprolol, Atenolol*)

Class III antiarrhythmic drugs – Drugs which act directly on cardiac cell membrane, prolong repolarisation and refractory periods, increase VF threshold, and act on peripheral smooth muscle to decrease peripheral resistance (*e.g. amiodarone, sotalol*)

Defibrillation – Termination of an erratic, life-threatening arrhythmia of the ventricles by a high energy, direct current delivered asynchronously to the cardiac tissue. The defibrillation discharge will often restore the heart's normal rhythm.

Diagnostics – Data gathered by an ICD or pacemaker to evaluate patient rhythm status, verify system operation, or assure appropriate delivery of therapy options.

Dual-Chamber Pacemaker – A pacemaker with two leads (one in the atrium and one in the ventricle) to allow pacing and/or sensing in both chambers of the heart to artificially restore the natural contraction sequence of the heart. (Also called physiologic pacing.)

Ejection Fraction – A measure of the output of the heart with each heartbeat (stroke volume divided by end-diastolic volume)

Electrocardiogram (ECG)—A printout from an electrocardiography machine used to measure and record the electrical activity of the heart.

Electromagnetic Interference (EMI)—Equipment and appliances that use magnets and electricity have electromagnetic fields around them. If these fields are strong, they may interfere with the operation of the ICD.

Electrophysiology (EP) Study – The use of programmed stimulation protocols to assess the electrical activity of the heart in order to diagnose arrhythmias.

Fibrillation – A chaotic and unsynchronised quivering of the myocardium during which no effective pumping occurs. Fibrillation may occur in the atria or the ventricles.

Heart Block – A condition in which electrical impulses are not conducted in the normal fashion from the atria to the ventricles. May be caused by damage or disease processes within the cardiac conduction system.

Haemodynamics – The forces involved in circulating blood through the cardiovascular system. The heart adapts its haemodynamic performance to the needs of the body, increasing its output of blood when muscles are working and decreasing output when the body is at rest.

Holter monitoring – A technique for the continuous recording of electrocardiographic (ECG) signals, usually over 24 hours, to detect and diagnose ECG changes. (Also called ambulatory monitoring.)

ICD—Abbreviation for Implantable Cardioverter Defibrillator. An ICD is an implanted device used to treat abnormal, fast heart rhythms. Several types of therapies are used by the ICD, including cardioversion, defibrillation, and antitachycardia pacing.

Ischaemia – Insufficient blood flow to tissue due to blockage in the blood flow through the arteries.

Lead - In an ICD system, the wire or catheter which conducts energy from the ICD to the heart, and from the heart to the ICD.

Left ventricular dysfunction - A heart condition in which the heart is unable maintain normal cardiac output due to a deficiency in the left ventricle.

Myocardial infarction – Death of a portion of the heart muscle tissue due to a blockage or interruption in the supply of blood to the heart muscle.

Myocardium – The middle and the thickest layer of the heart wall, composed of cardiac muscle.

Premature atrial contraction (PAC) – A contraction in the atrium which is initiated by an ectopic focus and occurs earlier than the next expected normal sinus beat.

Premature ventricular contraction (PVC or VPD) – A contraction in the ventricle which is initiated by an ectopic focus and occurs earlier than the next expected normal sinus or escape rhythm beat.

Sinoatrial (SA) Node—The heart's natural pacemaker located in the right atrium. Electrical impulses originate here and travel through the heart, causing it to beat.

Sudden cardiac death (SCD) – Death due to cardiac causes within 1 hour of the onset of symptoms, with no prior warning. Usually caused by ventricular fibrillation.

Supraventricular tachycardia (SVT) - A tachycardia originating from above the ventricles.

Syncope – Fainting, loss of consciousness, or dizziness which may be due to a transient disturbance of cardiac rhythm (arrhythmia) or other causes.

Tachycardia (Tachyarrhythmia) – Rapid beating of either or both chambers of the heart, usually defined as a rate over 100 beats per minute.

Ventricle—One of the two lower chambers of the heart. (See Atrium)

Ventricular Fibrillation (VF)—Very fast, chaotic, quivering heart contractions that start in the ventricles. During VF, the heart does not beat properly. This often results in fainting. If left untreated, it may result in cardiac arrest. Blood is not pumped from the heart to the rest of the body. Death will occur if defibrillation is not initiated within 6 minutes from the onset of VF.

Ventricular Tachycardia (VT)—A rapid heart rate that starts in the ventricles. During VT, the heart does not have time to fill with enough blood between heart beats to supply the entire body with sufficient blood. It may cause dizziness and light-headedness.

ABBREVIATIONS

AA	Antiarrhythmic
AF	Atrial fibrillation
ATP	Antitachycardia pacing
AVID	Antiarrhythmics Versus Implantable Defibrillators study
CABG	Coronary artery bypass graft
CAD	Coronary artery disease
CASH	Cardiac Arrest Study Hamburg
CHD	Coronary heart disease
CHF	Congestive heart failure
CIDS	Canadian Implantable Defibrillator Study
DFT	Defibrillation threshold
EF	Ejection fraction
EP	Electrophysiologic
EPS	Electrophysiologic Study
ESC	European Society of Cardiology
HCM	Hypertrophic cardiomyopathy
ICD	Implantable cardioverter defibrillator
LOS	Length of stay
LQTS	Long Q-T syndrome

LV	Left ventricular
LVEDED	Left ventricular end-diastolic echocardiographic diameter
LVEF	Left ventricular ejection fraction
MADIT	Multicenter Automatic Defibrillator Implantation Trial
MI	Myocardial infarction
MUSTT	Multicenter Unsustained Tachycardia Trial
NHLBI	National Heart, Lung, and Blood Institute
NNT	Number needed to treat analysis
NYHA	New York Heart Association
PVC	Premature ventricular contraction
SAECG	Signal averaged electrocardiogram
SCD	Sudden cardiac death
SBP	Systolic blood pressure
SVT	Supraventricular tachyarrhythmia
VF	Ventricular fibrillation
VPD	Ventricular premature depolarisation
VT	Ventricular tachycardia

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