

Criteria for a positive 12-lead ECG

Refer for cardiology opinion

P wave

left atrial enlargement:

negative portion of the P wave in lead V1:

0.1 mV in depth

0.04 s in duration;

right atrial enlargement:

peaked P wave in leads II and III or

V1 : 0.25 mV in amplitude.

QRS complex

frontal plane axis deviation:

right : $\pm 120^\circ$ or

left : -30° to -90° ;

increased voltage:

amplitude of R or S wave in a standard lead ≥ 2 mV,

S wave in lead V1 or

V2 ≥ 3 mV, or R wave in lead V5 or V6 ≥ 3 mV;

abnormal Q waves ≥ 0.04 s in duration or

25% of the height of the ensuing R wave or QS pattern in two or more leads;

right or left bundle branch block with QRS duration ≥ 0.12 s;

R or R0 wave in lead V1 ≥ 0.5 mV in amplitude and R/S ratio ≥ 1 .

ST-segment, T-waves, and QT interval

ST-segment depression or T-wave flattening or inversion in two or more leads;

prolongation of heart rate corrected QT interval ≥ 0.44 s in males and ≥ 0.46 s in females.

Rhythm and conduction abnormalities

premature ventricular beats or more severe ventricular arrhythmias;

supraventricular tachycardias, atrial flutter, or atrial fibrillation;

short PR interval (< 0.12 s) with or without 'delta' wave;

sinus bradycardia with resting heart rate ≤ 40 beats/min;

first (PR ≥ 0.21 s), second or third degree atrioventricular block.

aIncreasing less than 100 beats/min during limited exercise test.

bNot shortening with hyperventilation or limited exercise test.

Modified from Corrado et al.³