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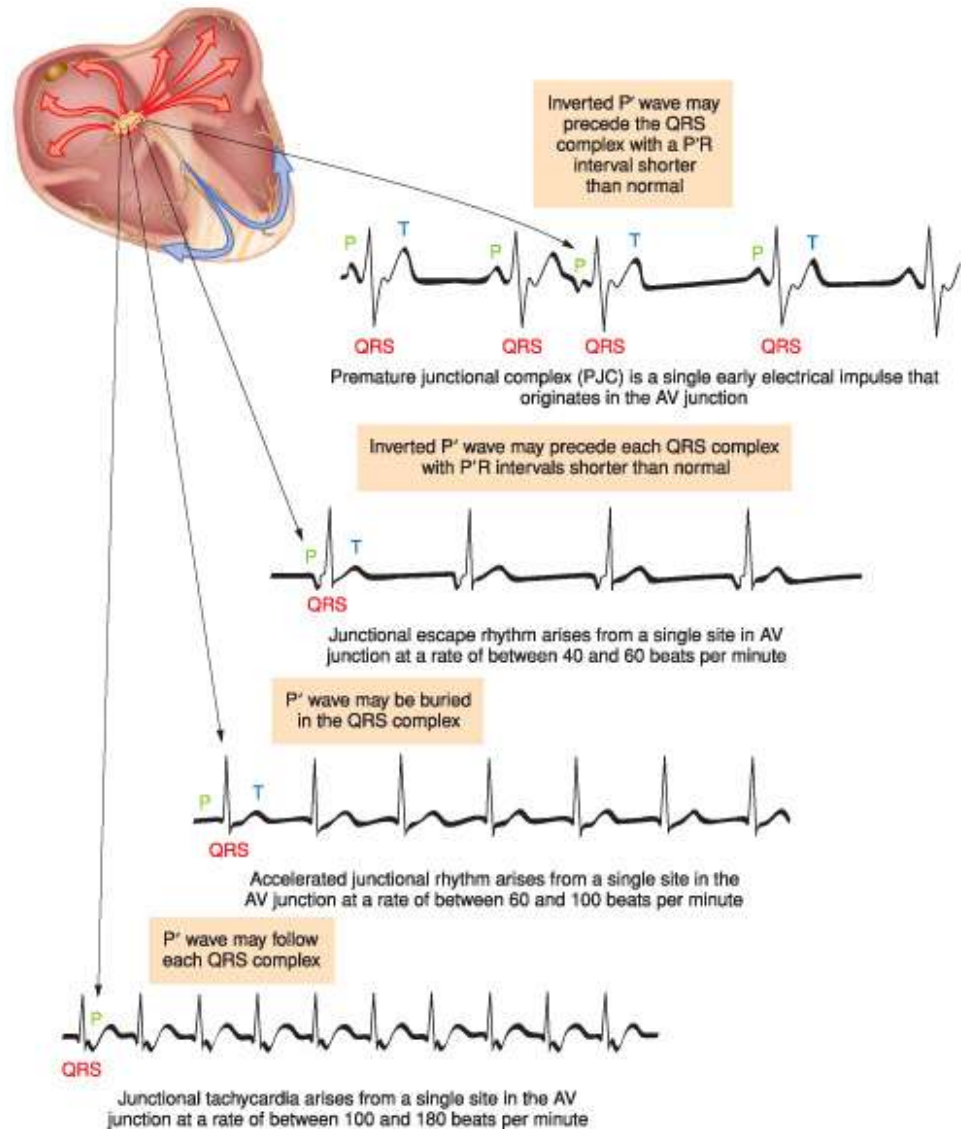
Junctional Dysrhythmias

Fast & Easy ECGs – A Self-Paced
Learning Program



Junctional Dysrhythmias

- Originate in AV junction (area around AV node and bundle of His)

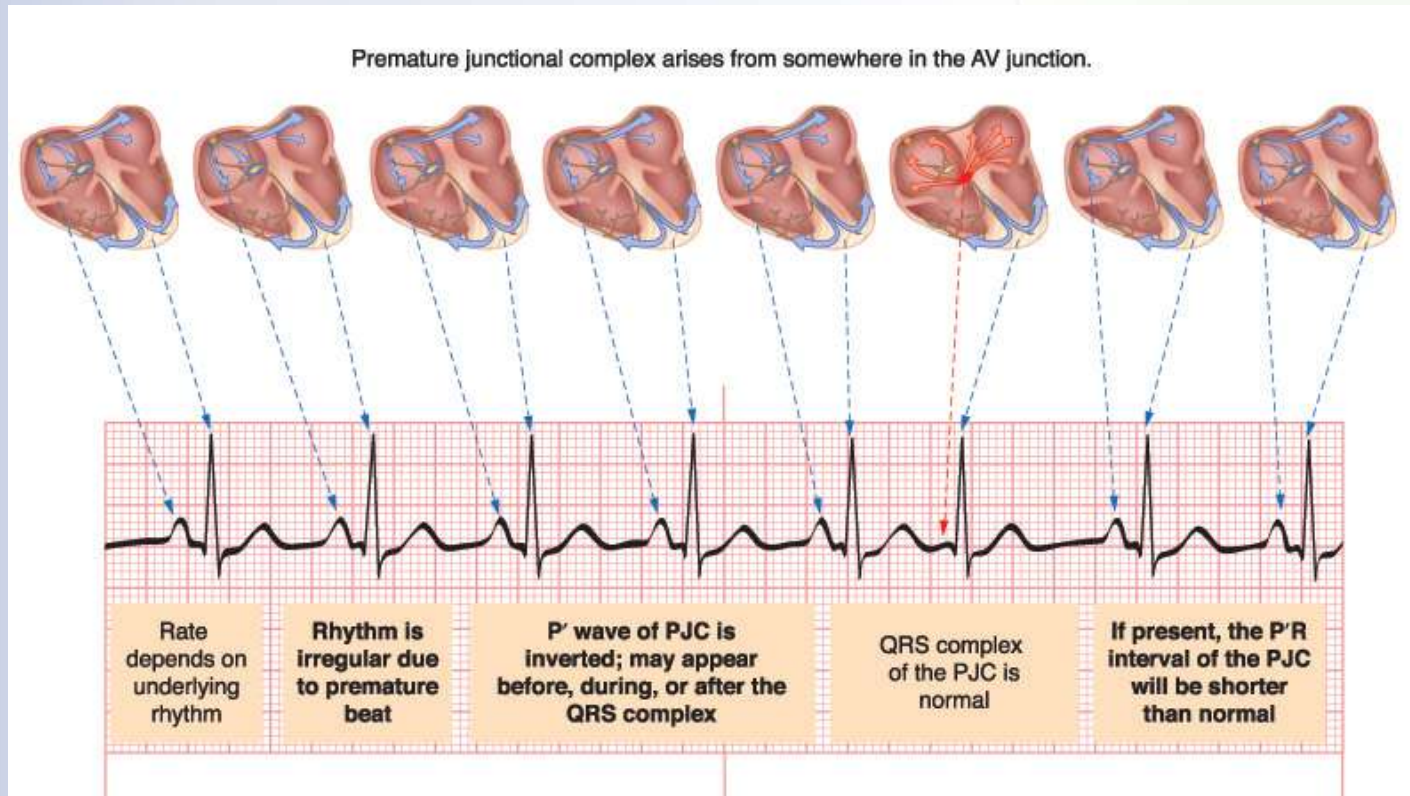


Junctional Dysrhythmias

- Key characteristics
 - P' waves may be inverted with a short P'R interval, absent (as they are buried by the QRS complex), or follow QRS complexes
 - QRS complexes usually normal unless there is an intraventricular conduction defect, aberrancy or preexcitation

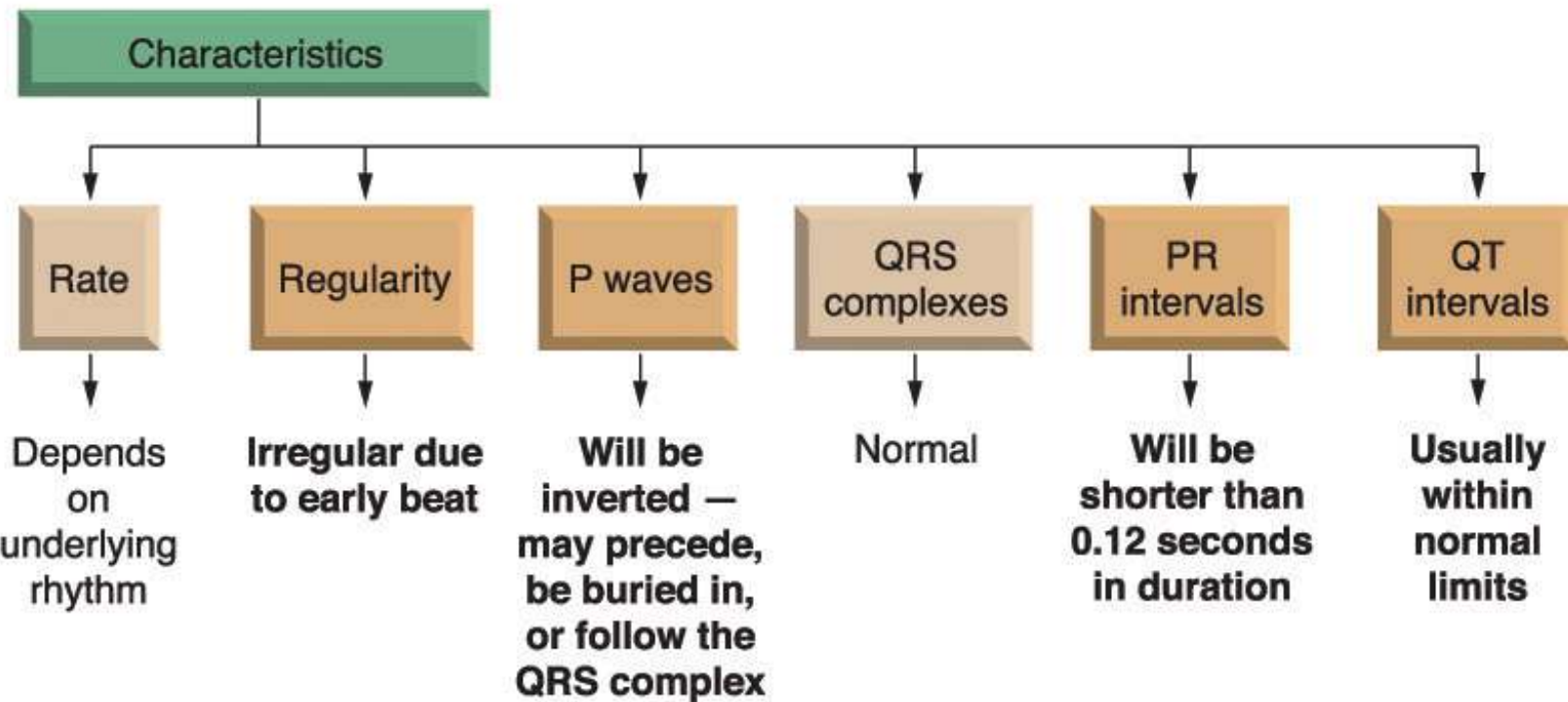
Premature Junctional Complex (PJC)

- Single early electrical impulse that arises from the AV junction



Premature Junctional Complex

Premature Junctional Complexes



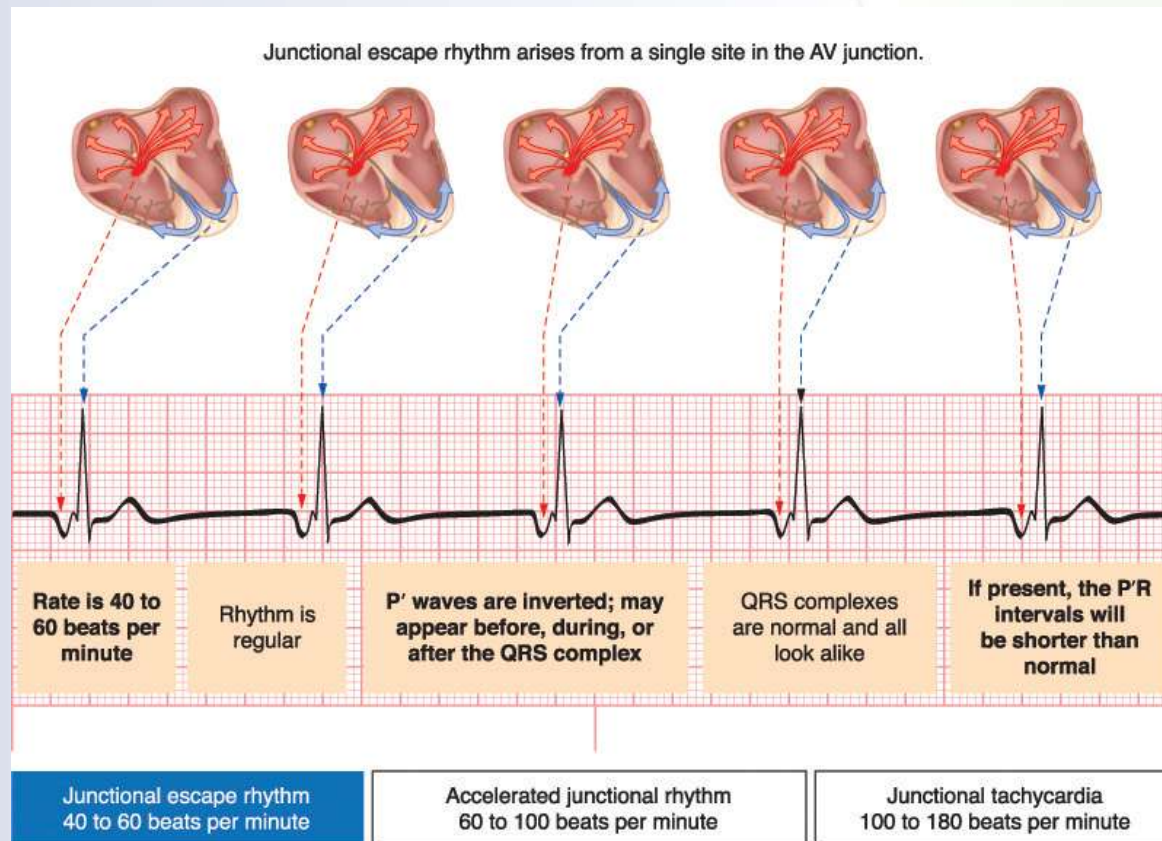
Premature Junctional Complex

Table 10-1 Premature Junctional Complexes

Causes of PJCs	Examples
Cardiac disorders	Ischemia, acute myocardial infarction, damage to the AV junction, congestive heart failure, valvular disease, rheumatic heart disease, swelling of the AV junction after heart surgery
Use of certain drugs	Digitalis toxicity, other cardiac medications (quinidine, procainamide), sympathomimetic drugs (cocaine, methamphetamine)
Other	Excessive caffeine, tobacco, or alcohol intake; increased vagal tone on the SA node; hypoxia; electrolyte imbalance (particularly magnesium and potassium); exercise

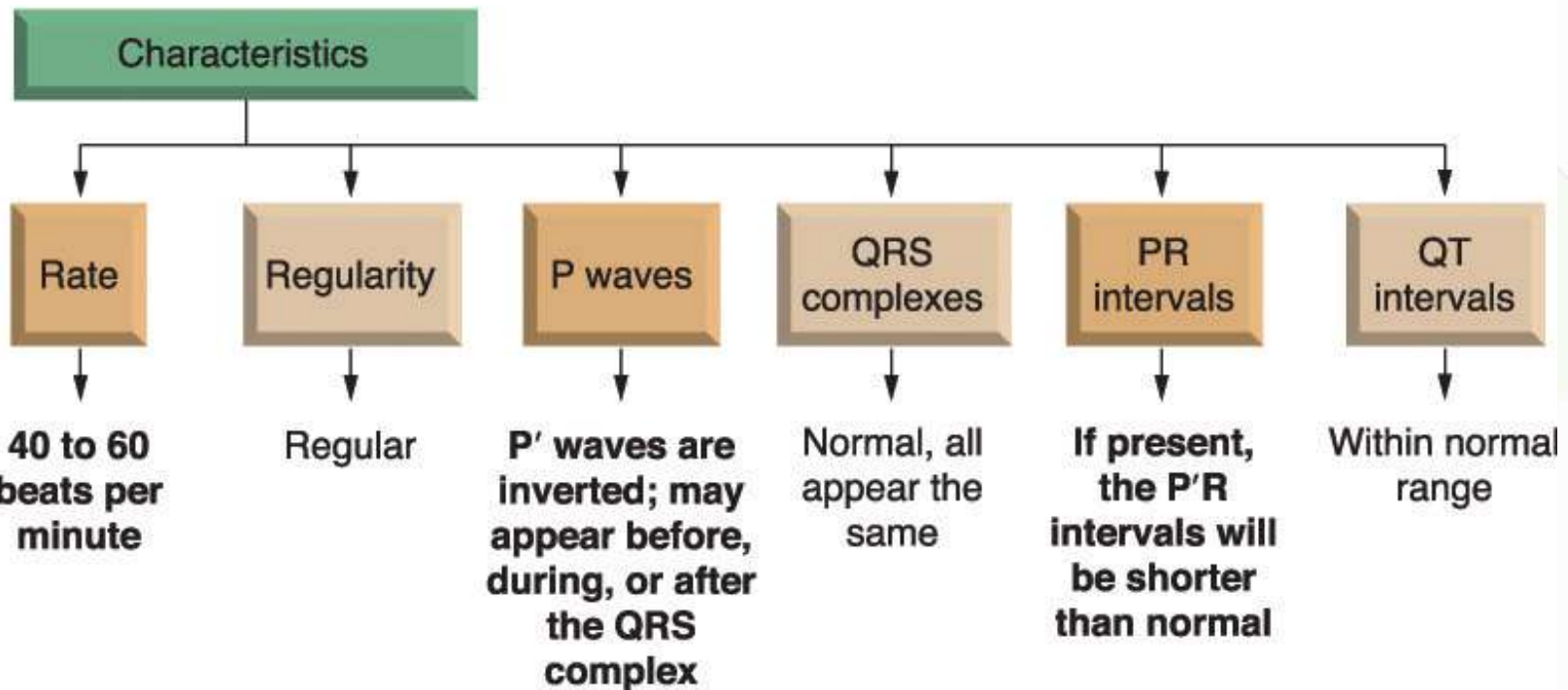
Junctional Escape Rhythm

- Arises from AV junction at rate of 40 to 60 BPM



Junctional Escape Rhythm

Junctional Escape Rhythm



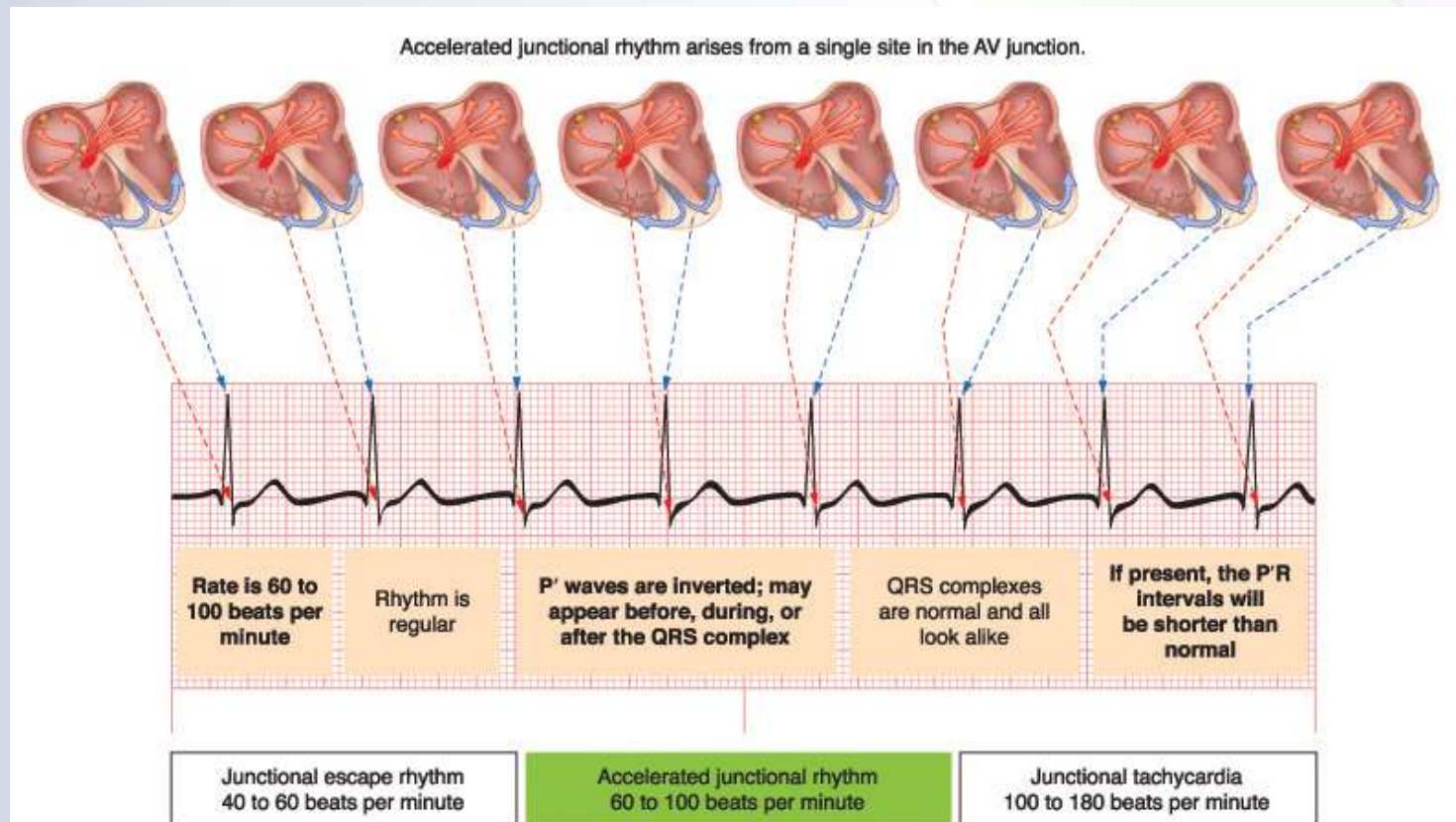
Junctional Escape Rhythm

Table 10-2 Junctional Escape Rhythm

Causes of junctional escape rhythm	Examples
Cardiac disorders	Increased vagal tone on the SA node, disease of the SA node (sick sinus syndrome), inferior wall myocardial infarction, rheumatic heart disease, valvular disease
Use of certain drugs	Digitalis, quinidine, beta-blockers, calcium channel blockers
Other	Postcardiac surgery, hypoxia

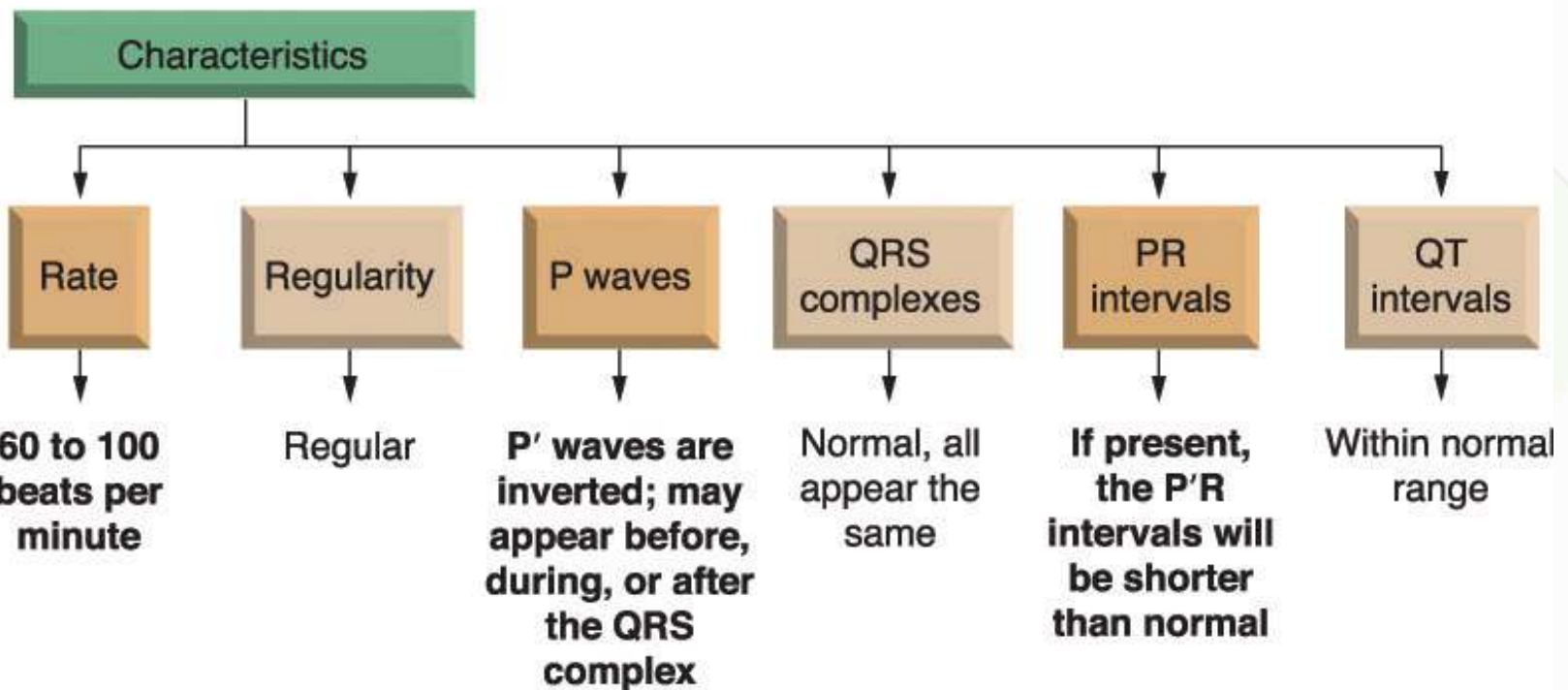
Accelerated Junctional Rhythm

- Arises from AV junction at rate of 60 to 100 BPM



Accelerated Junctional Rhythm

Accelerated Junctional Rhythm



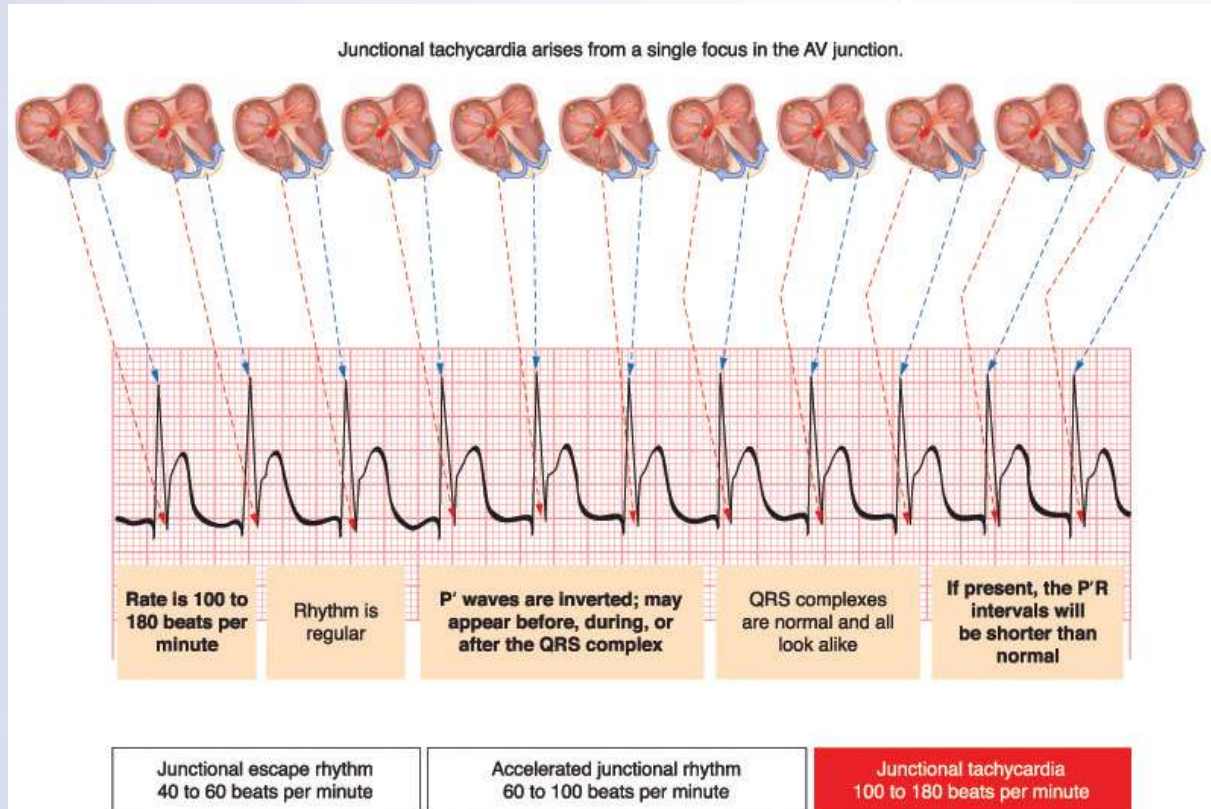
Accelerated Junctional Rhythm

Table 10-3 Accelerated Junctional Rhythm

Causes of Accelerated Junctional Rhythm	Examples
Cardiac disorders	Inferior or posterior wall myocardial infarction, rheumatic fever, post open-heart surgery
Use of certain drugs	Digoxin toxicity
Other	Hypokalemia, COPD

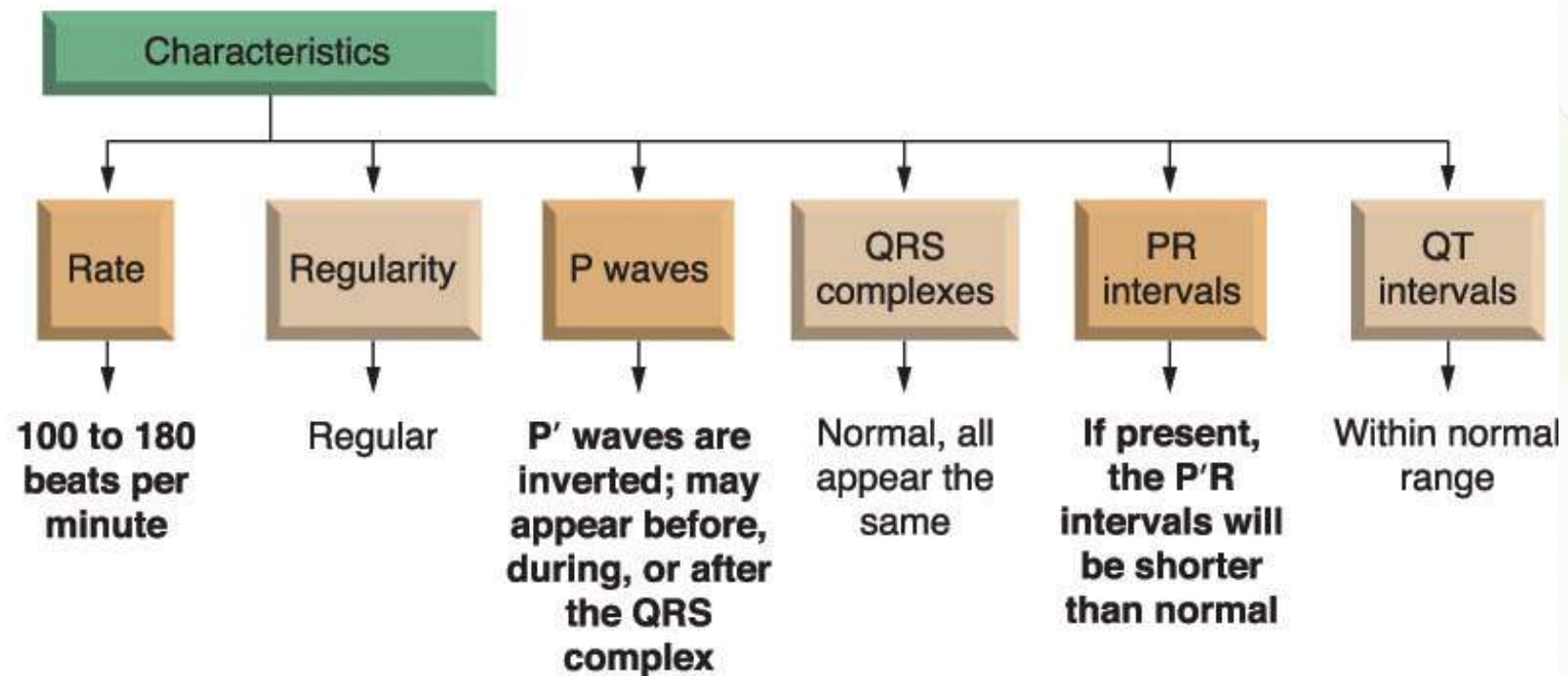
Junctional Tachycardia

- Fast ectopic rhythm that arises from bundle of His at rate of 100 to 180 BPM



Junctional Tachycardia

Junctional Tachycardia



Junctional Tachycardia

Table 10-4 Junctional Tachycardia

Causes of junctional tachycardia	Examples
Cardiac disorders	Inferior or posterior wall myocardial infarction, swelling of the AV junction after heart surgery, damage to AV junction from inferior wall MI or rheumatic fever, post open-heart surgery
Use of certain drugs	Digoxin toxicity, particularly in the presence of hypokalemia
Other	Excessive catecholamine administration, anxiety, hypoxia, electrolyte imbalance (particularly hypokalemia)

Practice Makes Perfect

- Determine the type of dysrhythmia



Rate: _____ (atrial) _____ (ventricular) Regularity: _____
P waves: _____ QRS complexes: _____ PR intervals: _____
QT intervals: _____ Dysrhythmia: _____

Practice Makes Perfect

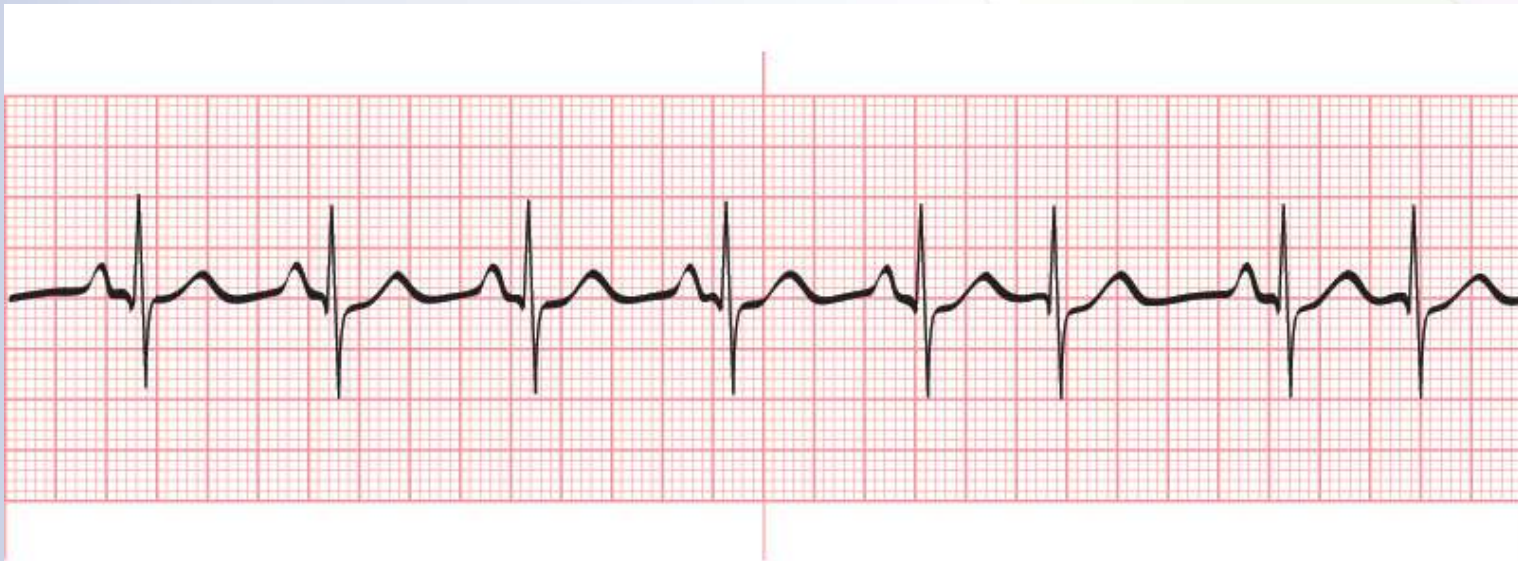
- Determine the type of dysrhythmia



Rate: _____ (atrial) _____ (ventricular) Regularity: _____
P waves: _____ QRS complexes: _____ PR intervals: _____
QT intervals: _____ Dysrhythmia: _____

Practice Makes Perfect

- Determine the type of dysrhythmia



Rate: _____ (atrial) _____ (ventricular) Regularity: _____
P waves: _____ QRS complexes: _____ PR intervals: _____
QT intervals: _____ Dysrhythmia: _____

Practice Makes Perfect

- Determine the type of dysrhythmia



Rate: _____ (atrial) _____ (ventricular) Regularity: _____
P waves: _____ QRS complexes: _____ PR intervals: _____
QT intervals: _____ Dysrhythmia: _____

Practice Makes Perfect

- Determine the type of dysrhythmia



Rate: _____ (atrial) _____ (ventricular)

P waves: _____ QRS complexes: _____

QT intervals: _____ Dysrhythmia: _____

Regularity: _____

PR intervals: _____

Practice Makes Perfect

- Determine the type of dysrhythmia



Rate: _____ (atrial) _____ (ventricular)

P waves: _____ QRS complexes: _____

QT intervals: _____ Dysrhythmia: _____

Regularity: _____

PR intervals: _____

Practice Makes Perfect

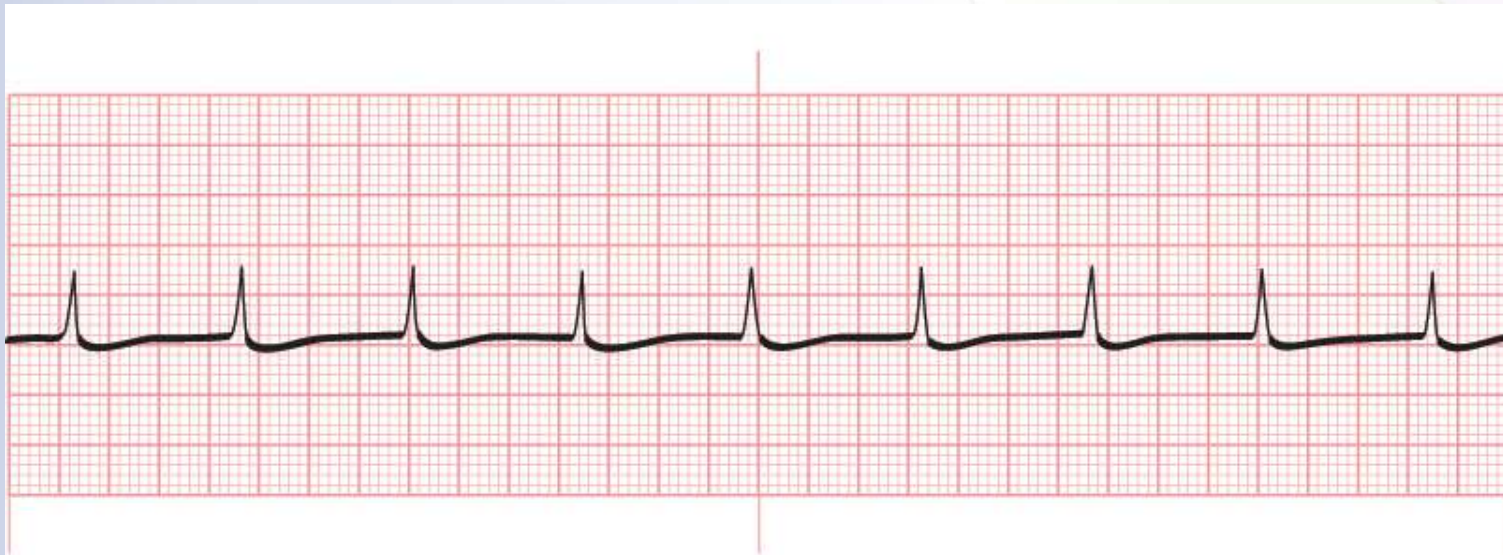
- Determine the type of dysrhythmia



Rate: _____ (atrial) _____ (ventricular) Regularity: _____
P waves: _____ QRS complexes: _____ PR intervals: _____
QT intervals: _____ Dysrhythmia: _____

Practice Makes Perfect

- Determine the type of dysrhythmia



Rate: _____ (atrial) _____ (ventricular) Regularity: _____
P waves: _____ QRS complexes: _____ PR intervals: _____
QT intervals: _____ Dysrhythmia: _____

Practice Makes Perfect

- Determine the type of dysrhythmia



Rate: _____ (atrial) _____ (ventricular) Regularity: _____
P waves: _____ QRS complexes: _____ PR intervals: _____
QT intervals: _____ Dysrhythmia: _____

Practice Makes Perfect

- Determine the type of dysrhythmia



Rate: _____ (atrial) _____ (ventricular) Regularity: _____
P waves: _____ QRS complexes: _____ PR intervals: _____
QT intervals: _____ Dysrhythmia: _____

Summary

- Junctional rhythms originate in the AV junction.
- Impulses originating in the AV junction travel upward and cause backward or retrograde depolarization of the atria resulting in inverted P' waves in lead II with a short P'R interval, absent P waves or P waves that follow the QRS complexes.
- With junctional dysrhythmias the QRS complexes are usually normal unless there is an intraventricular conduction defect, aberrancy or preexcitation.

Summary

- A premature junctional complex (PJC) is a single early electrical impulse that arises from the AV junction.
- Junctional escape rhythm arises from the AV junction at a rate of 40 to 60 beats per minute.
- Accelerated junctional rhythm arises from the AV junction at a rate of 60 to 100 beats per minute.
- Junctional tachycardia is a fast ectopic rhythm that arises from the bundle of His at a rate of between 100 and 180 beats per minute.