

Electrocardiography (ECG)

Electrocardiography (ECG) Notes:

1. Introduction to ECG:

- ECG is a non-invasive diagnostic tool used to record the electrical activity of the heart.
- It helps in detecting abnormalities in the heart's rhythm and structure.

2. Components of ECG:

- **P wave:** Represents atrial depolarization.
- **QRS complex:** Represents ventricular depolarization.
- **T wave:** Represents ventricular repolarization.

3. Interpretation of ECG:

- **Heart Rate:** Determined by measuring the distance between R waves (R-R interval).
- **Rhythm:** Regularity and pattern of electrical impulses.
- **Conduction Delays:** Prolonged PR interval may indicate AV block.
- **ST Segment:** Elevation or depression may indicate myocardial infarction.

4. Common ECG Abnormalities:

- **Bradycardia:** Heart rate <60 bpm.
- **Tachycardia:** Heart rate >100 bpm.
- **Atrial Fibrillation:** Irregular rhythm with no distinct P waves.
- **Myocardial Infarction:** ST segment elevation in specific leads.

5. Clinical Applications of ECG:

- Diagnosing arrhythmias, ischemic heart disease, and electrolyte imbalances.
- Monitoring patients during and after cardiac procedures.
- Screening for heart conditions in routine check-ups.

6. Procedure for ECG Recording:

- Electrodes are placed on specific locations on the limbs and chest.
- The machine records electrical impulses as waveforms on graph paper.
- The patient should remain still and relaxed during the test.

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7. Limitations of ECG:

- ECG provides a snapshot of heart activity and may not capture transient abnormalities.
- It may not detect all types of heart conditions, such as structural defects.

8. Conclusion:

- ECG is a valuable tool in diagnosing and monitoring various heart conditions.
- Interpretation of ECG requires knowledge of normal wave patterns and common abnormalities.

Remember, ECG interpretation should always be done by trained healthcare professionals to ensure accurate diagnosis and appropriate treatment.