

ECG - ARRHYTHMIAS

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CONDUCTION SYSTEM

1. SA Node (Sino-atrial)
2. AV Node (Atrio-ventricular)
3. Bundle branches

Slow HR < 60/min

- Sinus Bradycardia
- Sick Sinus Syndrome
- Second & third degree AV Block
- Escape rhythms
- Ventricular escape
- Asystole

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Tips

- Rate

3	4	5
100	75	60
- Axis I & II +ve (N) (-30-+90)
- Rhythm Sinus or not (Reg or Irreg)
- Narrow/Broad
- ST/T Changes
 - II, III, AVF, V2-V4, I AV, V5, V6

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BUNDLE BRANCH BLOCK

- QRS – depolarization < 0.12s
- Wide QRS – slow conduction
- **LBBB**
 - Small QV, small RV6
 - William
- RBBB
 - Morrow
- M pattern V1

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SINUS BRADYCARDIA

Features

- HR < 60 > 40
- P wave precedes QRS
- P wave upright lead II

Causes

- Drugs
- IHD, MI
- Hypothyroid, hypothermia
- Electrolyte
- Obstructive jaundice
- Uraemia
- Raised ICP
- SSS – sick sinus syndrome

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1st DEGREE BLOCK

Features

- PR interval
- > 0.2 sec
- 5 small sq., 1 big one!

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2nd DEGREE BLOCK AV Node

- **Mobitz I**
 - Wenckebach
- **PR** lengthens with each beat until a P-wave fails to produce QRS
- **Mobitz II**
 - P-wave occasionally forgets to produce QRS complex
- **2:1 AV Block**
 - 2 P-waves to QRS

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3rd DEGREE BLOCK AV NODE

Features

- P-waves regular
- QRS regular
- No relationship
- QRS – narrow or broad!

Special types

- Slow AF

Treatment

- Needs PPM

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TACHYCARDIA

Sinus tachycardia

- HR >100
- Features
- same as bradycardia

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TACHYCARDIA

- Narrow vs broad
- Atrial
 - Flutter/Fibrillation/Tachycardia
- AVNRT
- AVRT
- VT

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ATRIAL FLUTTER

Features

- Rate 250-350
- AV Node blocks
- 2:1, 3:1, 4:1
- HR 150 – suspect A Flutter

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ATRIAL FIBRILLATION

10-25%

Features

No P-waves

- F-wave 400-600
- Irregularly irregular
- Cause
 - Thyroid Increase
 - SSS
 - Alcohol or Caffeine
 - Mitral valve

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AVNRT

Features

- Narrow
- Rate 130-250
- Regular
- Broad (BBB)
- Retrograde P-wave

Treatment

1. CSM
2. Valsalva
3. Verapamil/Adenosine
4. Overdrive

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VENTRICULAR TACHYCARDIA

Features

- Broad complex 3 or more >120/min
- Rate 150-250
- P-waves disassociated
- Extreme axis

- Torsade

- VT vs SVT

- P-wave QRS >0.14
- Fusion Concordance
- Capture Axis

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MYOCARDIAL INFARCTION

ISCHAEMIA

1. E.C.G.
 2. Patterns
 3. Variation
- Q-wave – 1st deflection down
 - I,II,AVL, V5,V6 small Q
 - Lead III
 - >2small Sq; >25% of height, ?small sq. wide
 - Respiration disappear on inspiration
 - 90% of cases permanent

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PATTERNS

- II, III, AVF inferior
- V1-V4 anterior
- V1-V3 anteroseptal
- I, AVL, V5-6 lateral

Right ventricular

- V4R ST increase

- Posterior R-wave V1
T-wave upright

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