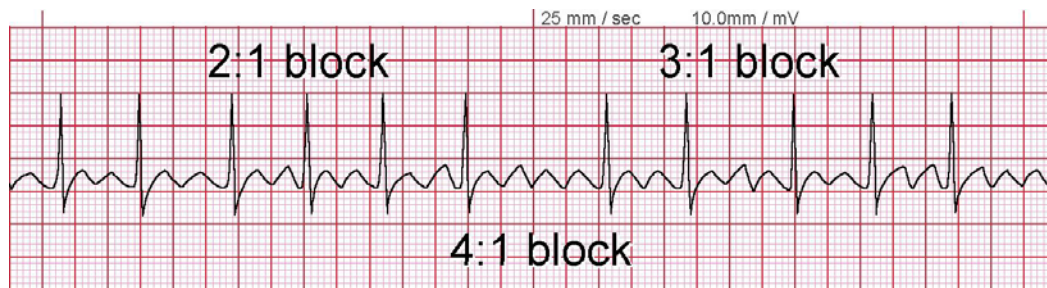


### Atrial Flutter



In atrial flutter an atrial focus activates the atria at a rate of around 300 times per minute. The baseline of the ECG becomes all P waves, giving it a “saw tooth” appearance in one or more leads. Since it is unusual for the AV node to conduct impulses at a rate faster than 200 per minute, AV block occurs: commonly at a 2 to 1, 3 to 1, or 4 to 1 ratio, yielding a ventricular response rate of 150, 100, or 75 per minute respectively. (NB: When the ratio of P waves to QRS complex is 2:1, 3:1, or 4:1 it would be more correct to use the term 2:1, 3:1, or 4:1 conduction rather than block. To avoid confusion, some authors simply use the term 2:1, 3:1, or 4:1 flutter.) Since the atrial flutter impulses depolarize the ventricles by passing down the His bundle and bundle branches, the accompanying QRS complexes are normal in width and have the same morphology as that of sinus beats.

### Atrial Fibrillation



Atrial fibrillation is one of the most common arrhythmias in which multiple foci in the atria depolarize rapidly and erratically at a combined rate of 400 times/min or more. Instead of generating well recognized P waves, the atria just quiver and produce fine f waves on the ECG baseline seen in one or more leads. The AV node is constantly bombarded by depolarization impulses but only some of these impulses manage to get through. The ventricular response is totally irregular without discernible pattern (irregularly irregular) generally at a rate between 110 and 180 beats/min. Since impulses that manage to pass through the AV node are conducted