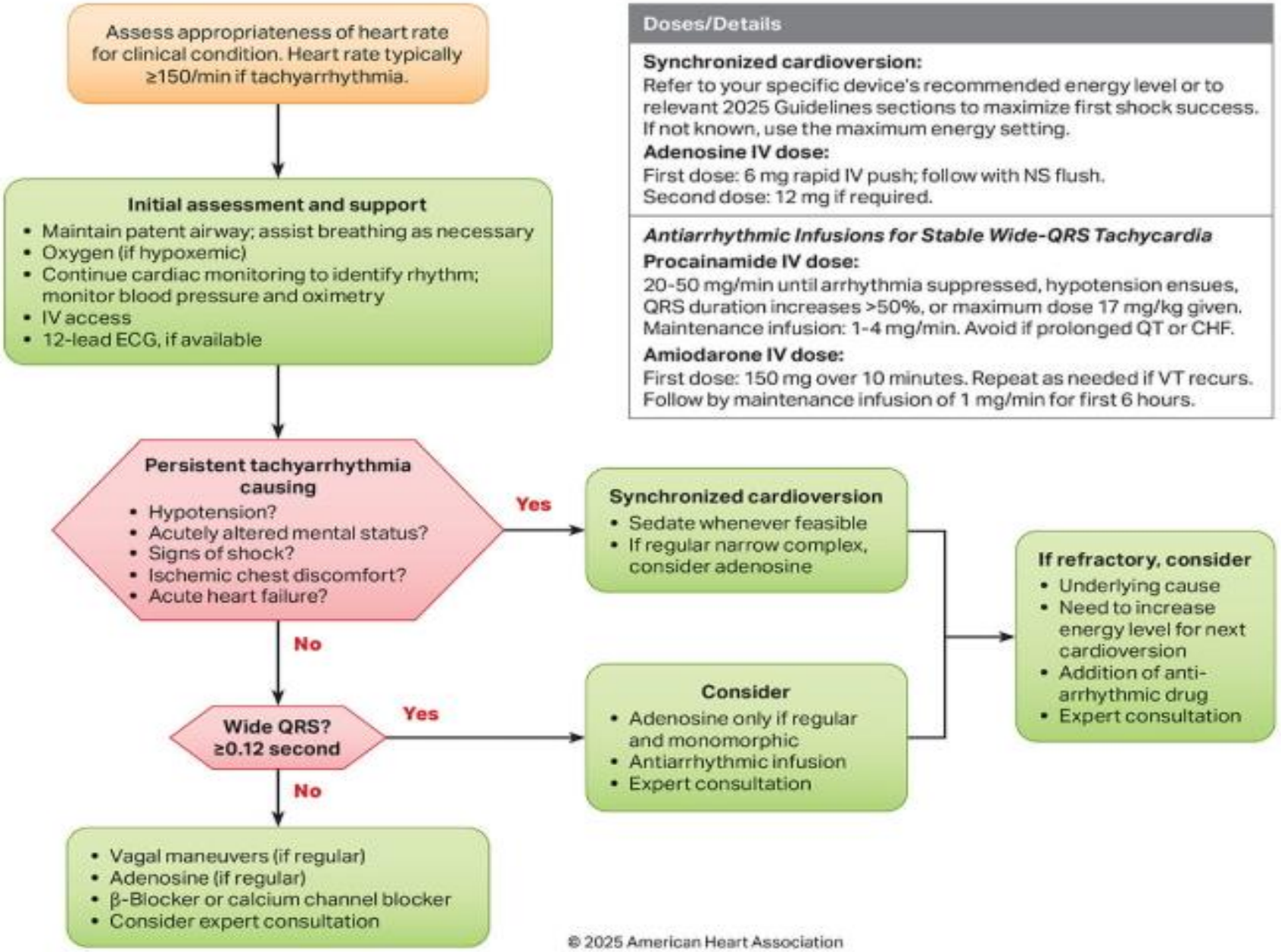
APPROACH TO TACHYARRHYTHMIAS IN ER

Presenter
Dr. Vedalatha K
ER Consultant.

Moderator
Dr. Ashok kumar
Asst. Professor
Emergency Department.

Adult Tachyarrhythmia With a Pulse Algorithm



Scenario 1

A 29 yr old female presented to ER with c/o fever with chills since 2 days.

A/w 4-5 episodes of vomitings since today morning.

C/o burning micturition since 1 week.

No known co-morbidities.

O/E: Patient is lethargic and moderately dehydrated.

GCS: E4V5M6.

Vitals

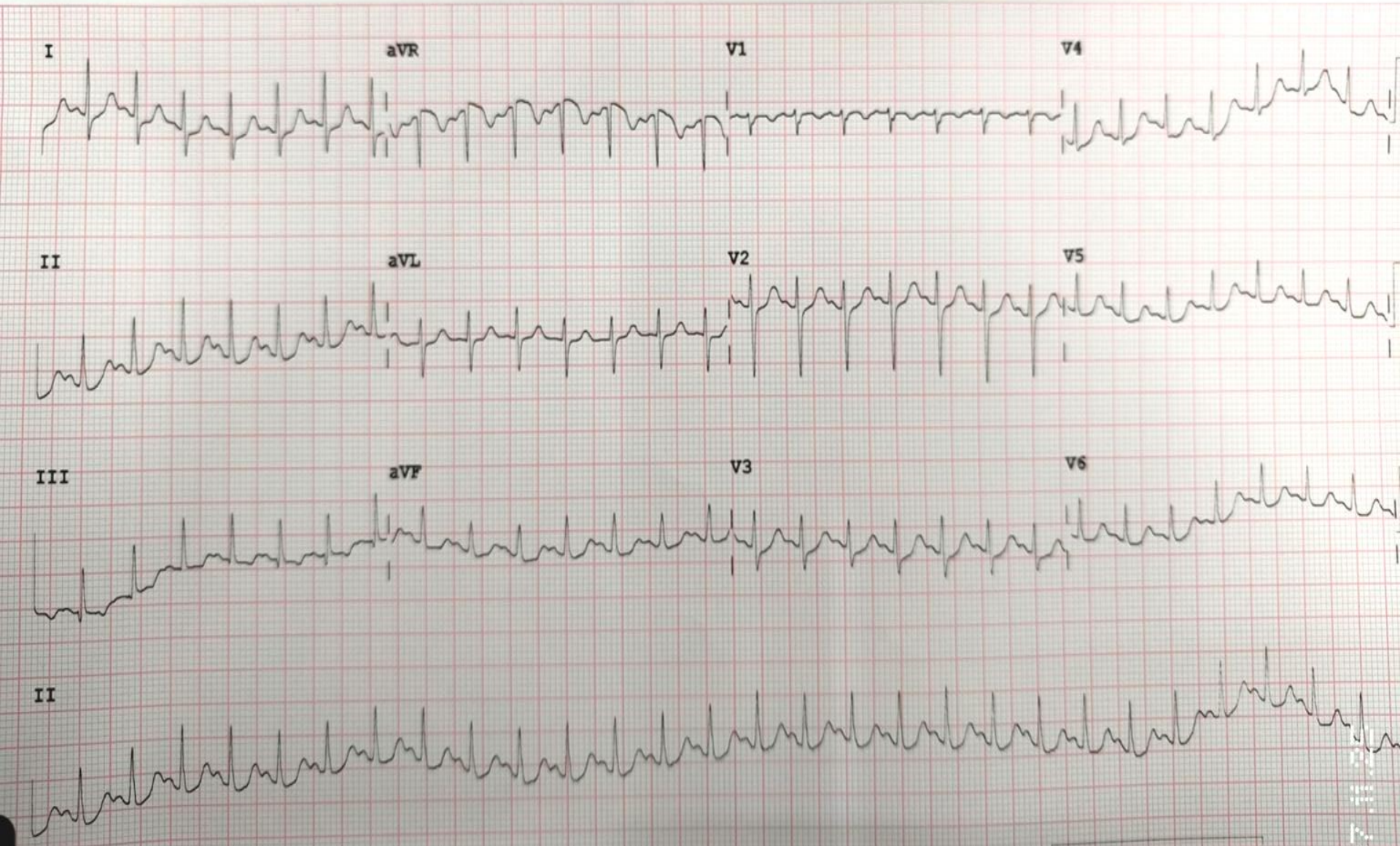
BP: 120/80mmHg ; HR: 170bpm; SPO2: 99%RA; Temp: 102.9F

GRBS: 155mg/dl

Finding “P” Wave….

--AXIS--
P 48
QRS 85
T 25
12 Lead; Standard Placement

- ABNORMAL ECG -
>>> Very High Heart Rate <<<
Unconfirmed Diagnosis



Device:
Speed: 25 mm/sec
Limb: 10 mm/mV
Chest: 10.0 mm/mV
F 60~ 0.15-100 Hz
100B CL

ECG shows HR: 175bpm with sinus pattern (P wave followed by QRS complex with regular rhythm). This is considered as Sinus Tachycardia.

Management:

✓Treat the underlying cause.

✓Inj PCM 1 gram IV stat with Cold sponging.

✓She is further managed conservatively with IV fluids.

✓After 1 hour, she is symptomatically better, HR came down to 120bpm.

✓Admitted for further management.

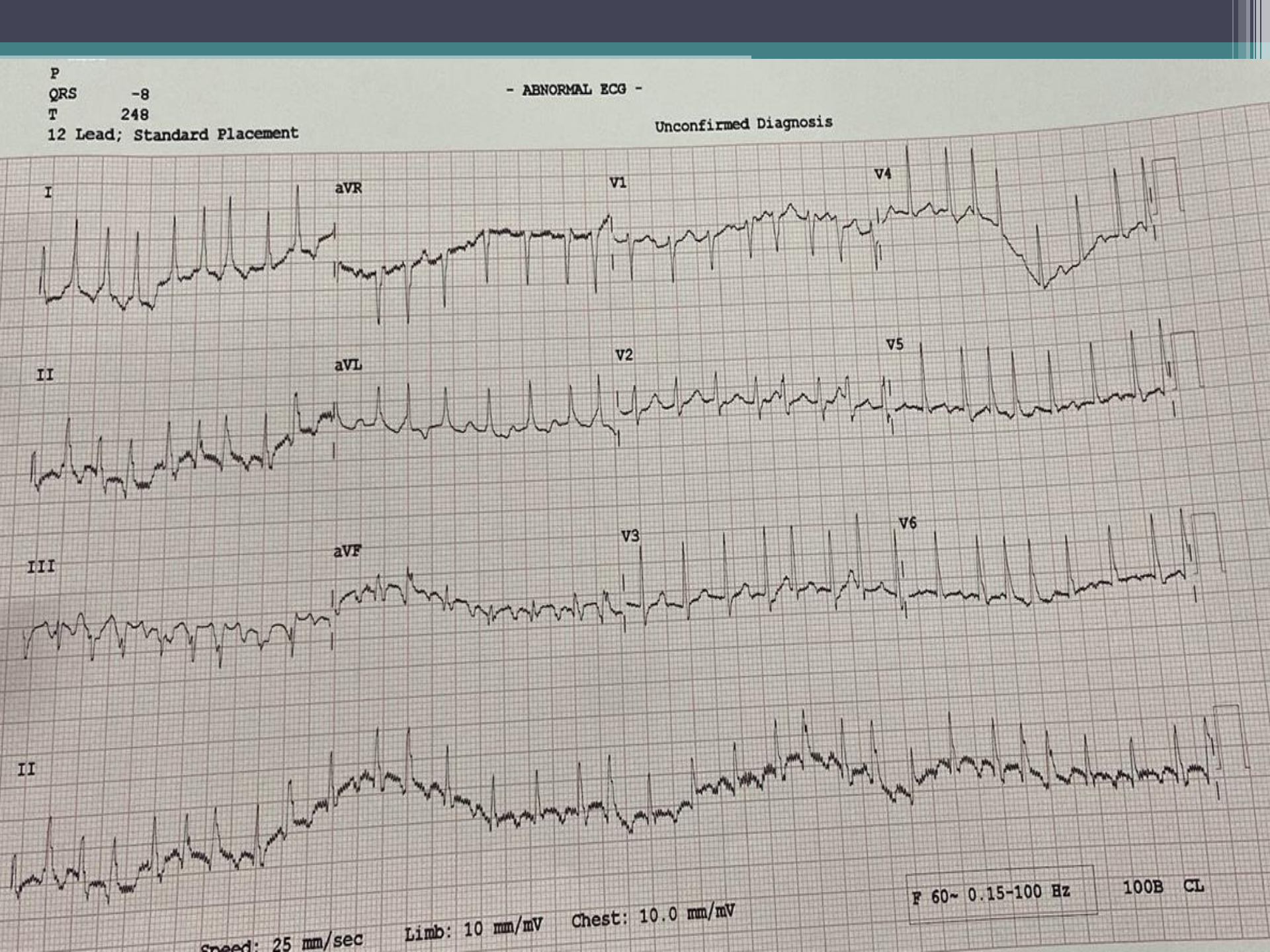
Scenario 2

A 59 yr old Male presented to ER with c/o palpitations since 1 day. C/o generalised weakness since 1 week.
No chest pain/ SOB/ fever/ abdominal pain/ loose stools/ vomitings.
K/c/o DM.

O/E: Patient is restless.
GCS: E4V5M6.

Vitals:
BP:130/90mmHg; PR: 175bpm; SpO2: 98% RA; GRBS: HIGH.
Bedside Urine ketones: Negative.

ECG is as follows.


P
QRS -8
T 248
12 Lead; Standard Placement
- ABNORMAL ECG -
Unconfirmed Diagnosis
I
aVR
V1
V4
II
aVL
V2
V5
III
aVF
V3
V6
II
Speed: 25 mm/sec
Limb: 10 mm/mV
Chest: 10.0 mm/mV
F 60~ 0.15-100 Hz
100B CL

ECG shows Atrial Fibrillation with Fast ventricular rate.

(Absent P waves, High HR, Irregularly irregular rhythm).

Management:

Inj Amiodarone 150 mg IV over 10-15 min given

F/b Amiodarone infusion @1mg/minute for 6 hours.

Patient is treated for uncontrolled sugars and admitted for further evaluation and management.

Scenario 3

A 70 yr old Female presented to ER with decreased responsiveness since morning. A/w abnormal breathing.
She has h/o fever, abdominal pain since 7 days and loose stools(7-10 episodes) since 2 days.

O/E: Drowsy with GCS- E2V1M4-5.

Vitals
SpO2: 90% RA, PR:131/min, BP: NR, GRBS:351mg/dl, Temp: 98.6F

She was intubated i/v/o threatened airway and aspiration risk and is started on NorAdrenaline infusion.

ECG is as follows.

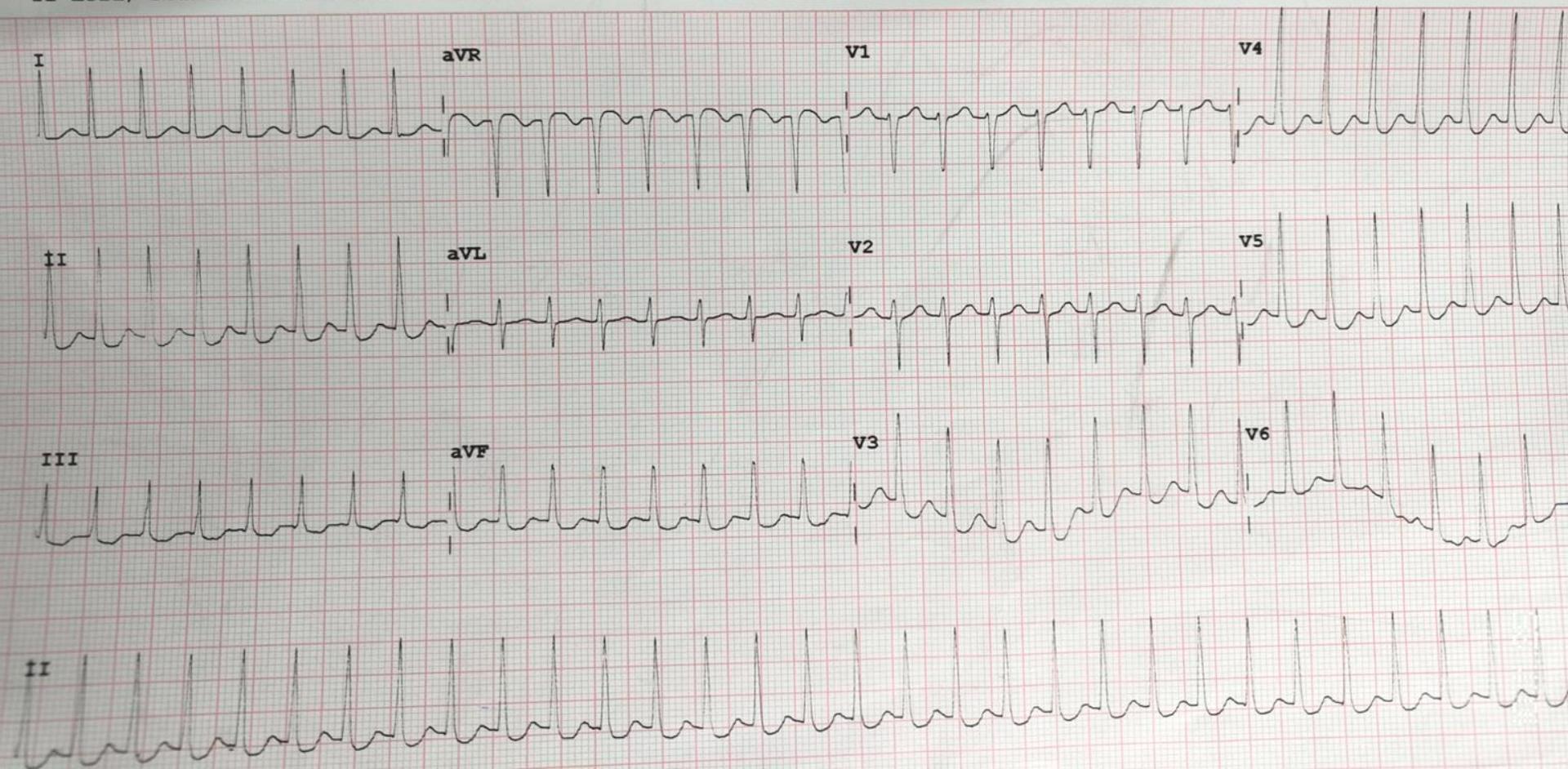
EMERGENCY

ate 194 . Age not entered, assumed to be 50 years old for purpose of ECG interpretation
. Supraventricular tachycardia.....V-rate>(220-age), QRSd<120
PR . ST depression, probably rate related.....ST <-0.10mV & extreme tachycardia
QRSD 76
QT 248
QTc 446

--AXIS--
P 0
QRS 53
T 5
12 Lead; Standard Placement

- ABNORMAL ECG -

Unconfirmed Diagnosis



ECG is consistent with Supra ventricular Tachycardia (SVT).
(HR>150bpm, Regular rhythm, Narrow QRS Complex and unidentifiable P waves)

Management:
Synchronised cardioversion with 50 J – Not reverted.
Increased the energy level to 100 J - Reverted to Sinus rhythm.

Diagnosed as Sepsis with MODS. Admitted in ICU.

In stable patients:
1.Vagal maneuvers
2.Inj Adenosine IV- 6mg- 12mg-12mg at EJV or Cubital f/b 20cc flush.
C/I of Adenosine: Asthma, Sick sinus, Transplanted heart, Hypotension, AV blocks & AVNRT.

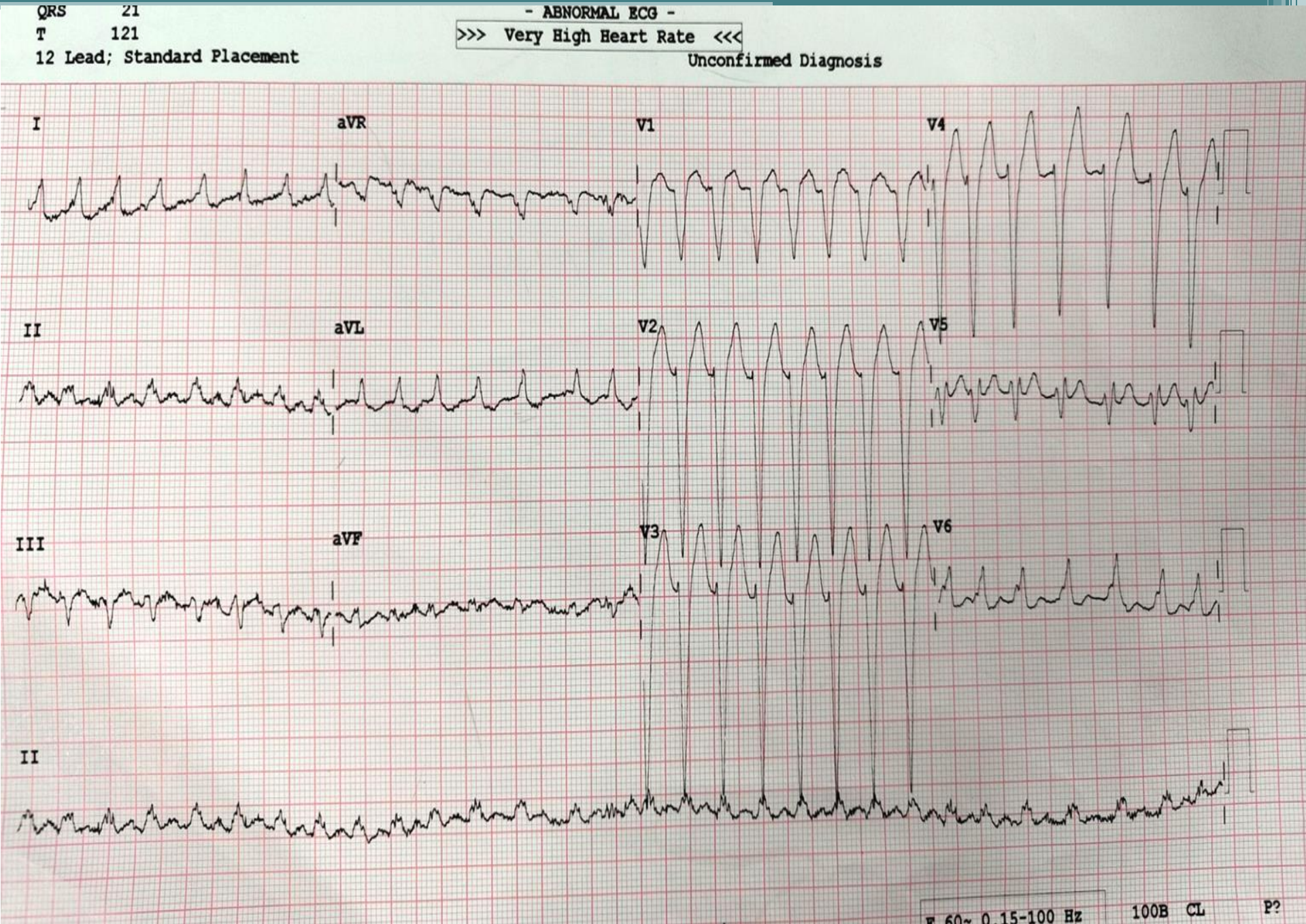
Scenario 4

A 73 yr old Male presented to ER with c/o SOB since 4 days. A/w dry cough.
No chest pain/ fever/ Orthopnea.
No known comorbidities.

O/E: Patient is dyspnoeic with profuse sweatings.
GCS: E4V5M6.

Vitals
BP: 120/80 mmHg, PR:190/min, SpO2: 98% RA, RR: 32cpm, GRBS: 180mg/dl.

ECG is as follows.


QRS 21
T 121
12 Lead; Standard Placement
- ABNORMAL ECG -
>>> Very High Heart Rate <<<
Unconfirmed Diagnosis
I
aVR
V1
V4
II
aVL
V2
V5
III
aVF
V3
V6
II
60~ 0.15-100 Hz
100B CL
P?

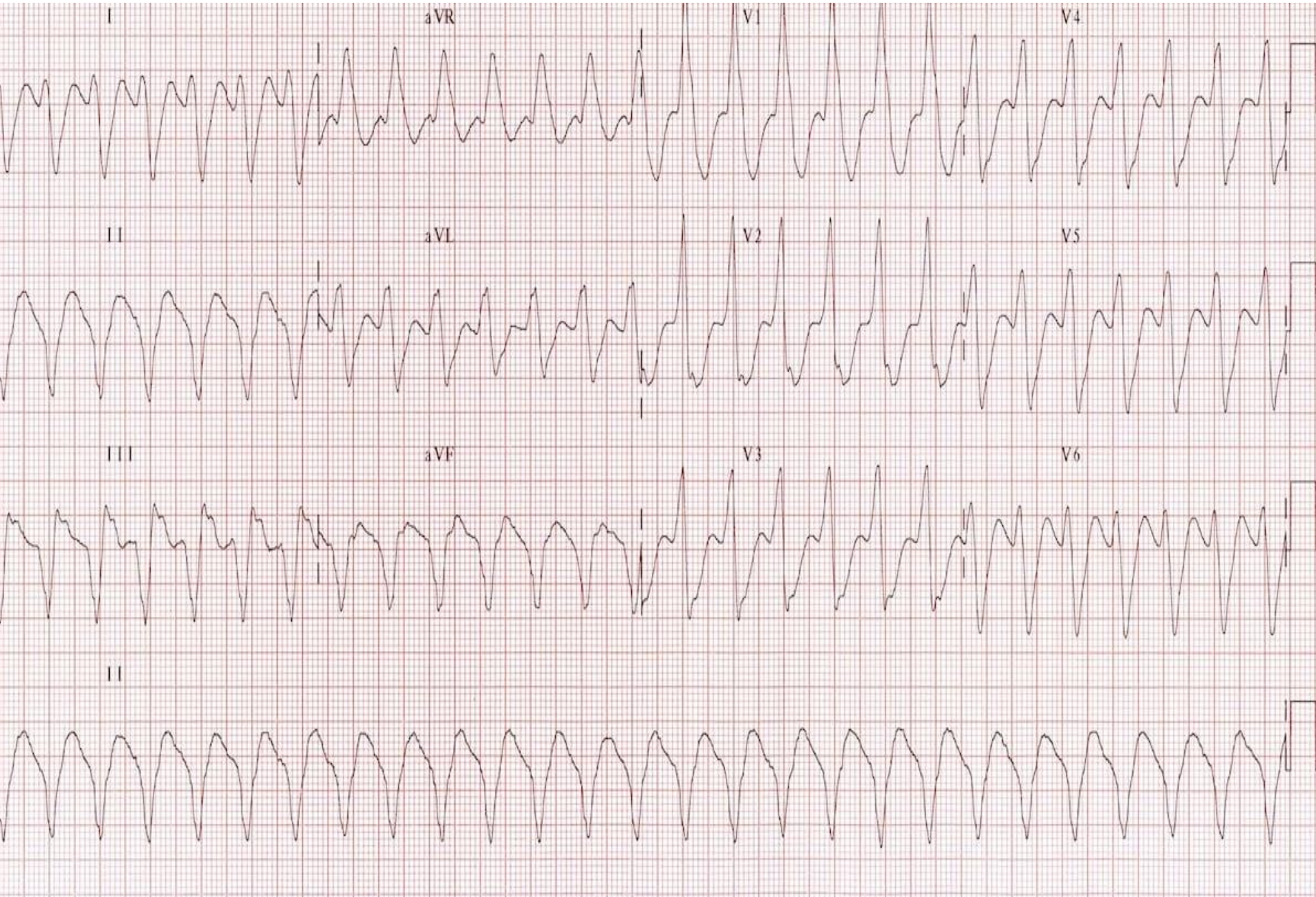
Management:
Inj. Amiodarone 150mg in 100ml NS over 15 minutes.
Reverted to normal sinus rhythm.

F/b Amiodarone infusion at 1mg/min

ECG is consistent with SVT with aberrancy.
(Unidentifiable P wave, Regular, Wide QRS complex with LBBB)

Points which *increase* the likelihood of VT :
- Absence of typical RBBB or LBBB morphology
- Extreme axis deviation ("northwest axis"): QRS positive in aVR and negative in I and aVF
- Very broad complexes > 160ms

.


I
aVR
V1
V4
II
aVL
V2
V5
III
aVF
V3
V6
II

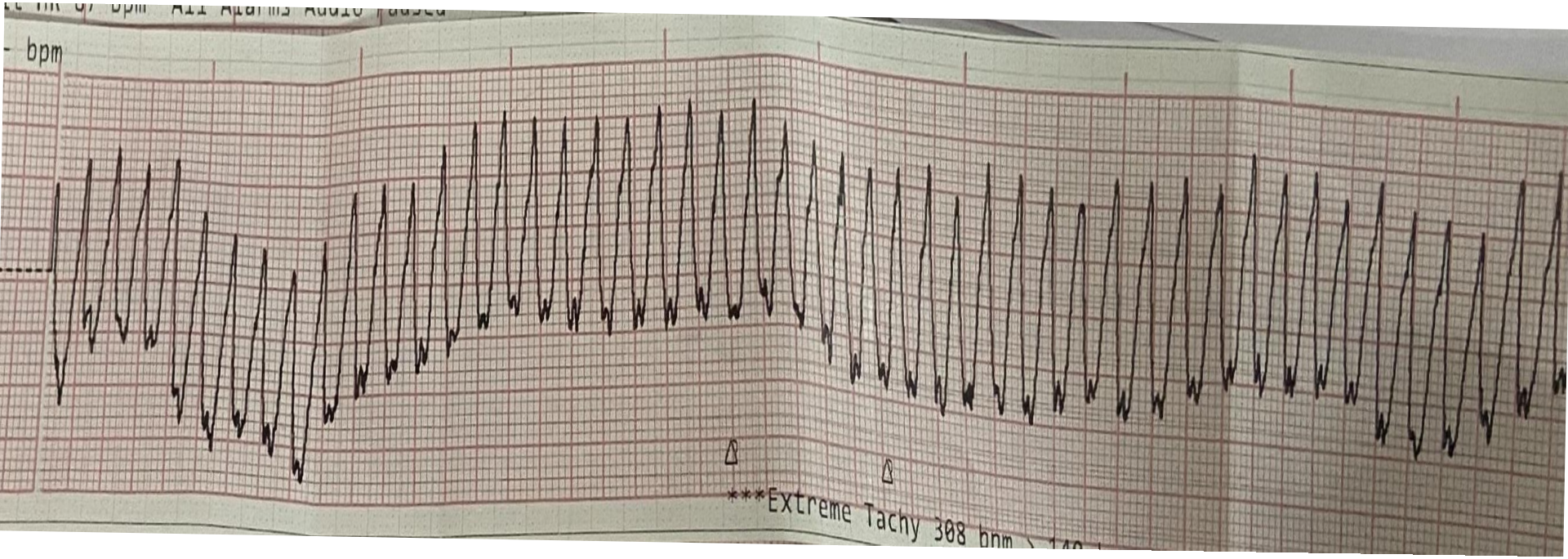
Scenario 5

A 40 yr old male presented to ER with c/o chest pain since 4 days.
Burning type of pain that is aggravated since today morning.
No other complaints.
No known comorbidities.
No social habits.

O/E: Patient is restless with sweating.
GCS : E4V5M6

Vitals:
BP: 120/80 mmHg; PR:75 bpm; SpO2:100% RA; GRBS: 157 mg/dl

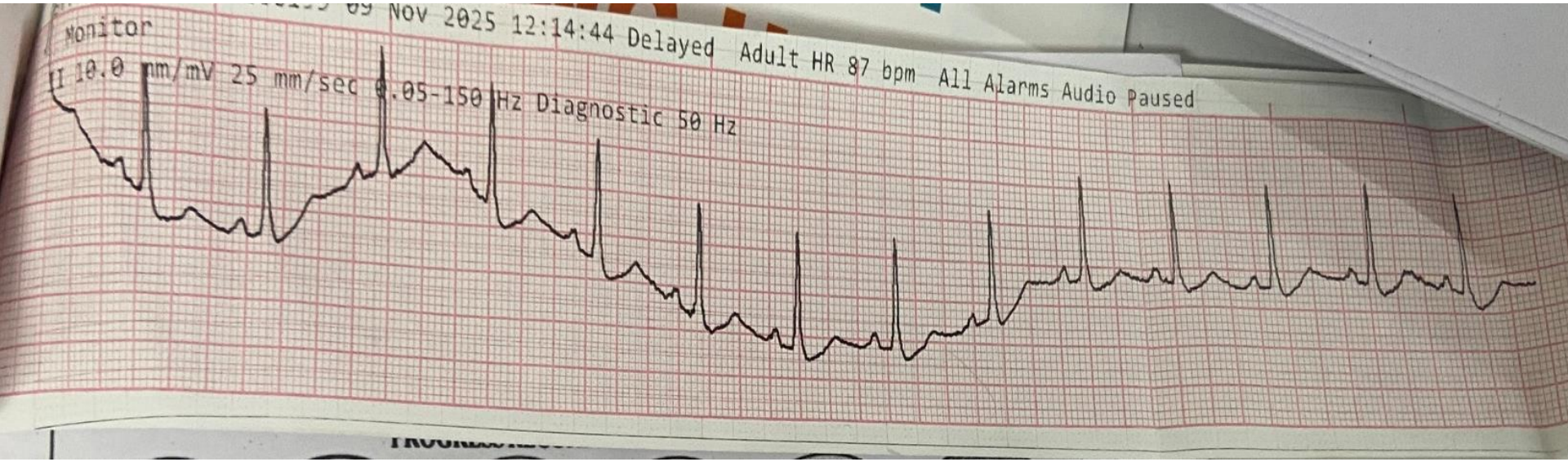
Chest leads are connected and the rhythm on Defibrillator is as follows.


bpm
***Extreme Tachy 308 bpm

ECG shows Ventricular Tachycardia.
HR>100bpm, regular rhythm and wide QRS complex.

Patient is seen deteriorating with profuse sweating, cold extremities, rapid rise in HR and drowsiness.

<u>Management</u>:
Cardioversion with 100 Joules given. Rhythm reverted to Normal sinus rhythm.



TAKE HOME MESSAGE

1) Always check for P wave
2) If in doubt don't give Adenosine
3) Check for Contraindications of Adenosine.
4) If patient is UNSTABLE go for CARDIOVERSION.


THANK YOU!
SORRY THIS CARD'S SO TACHY