

# ESIM Winter School Saas-Fee, 2013 Seaside Story



**ANNIKA ADOBERG  
PILLE HARDING  
UNIVERSITY OF TARTU  
ESTONIA**



# Presentation



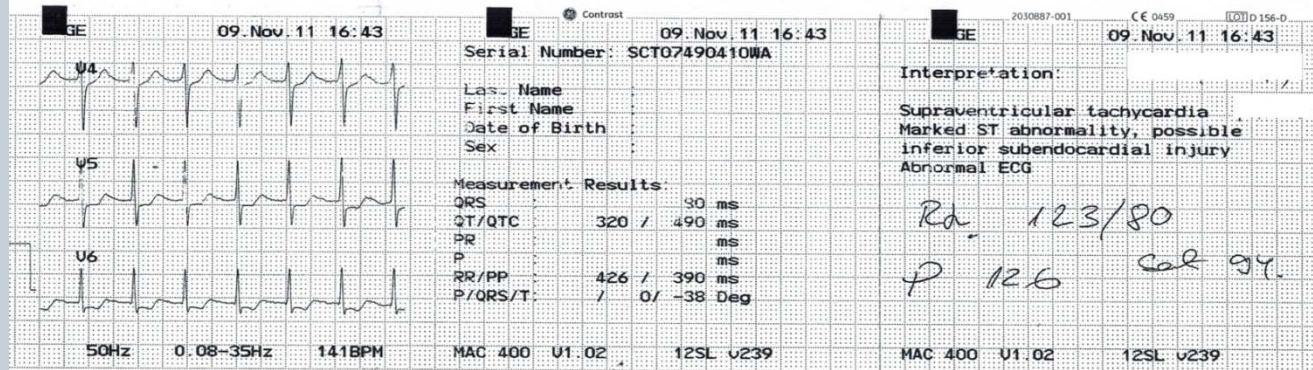
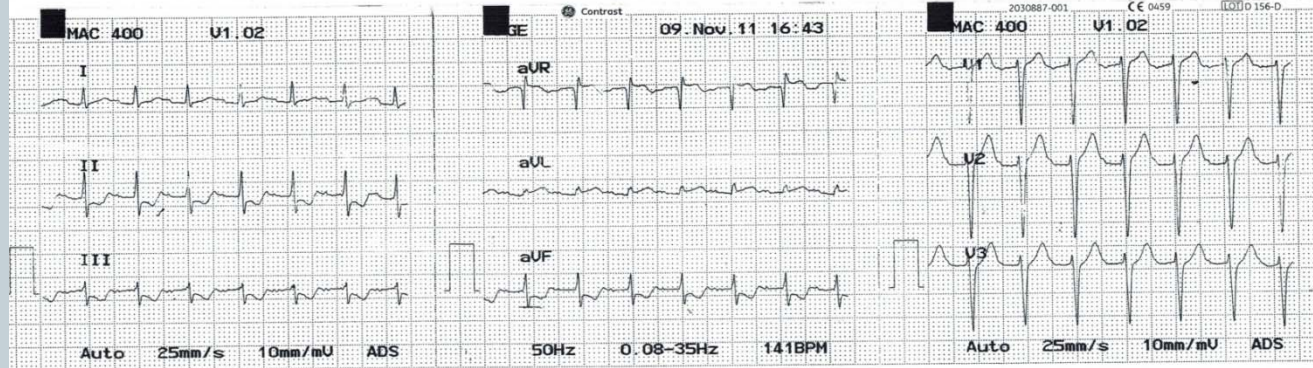
- 64 y.o. lady
- complaining of palpitations, tachycardia. No chest pain.
- ECG: ST changes + SVT (fr 126x/min).  
RR 123/80mmHg.

## **Past medical history:**

- depressive schizoaffective disorder (~15 years)

**Drug History:** olanzapine, zolpidem, ECT

# ECG



# Metoprolol 25 mg given



- 2nd ECG: Sinus rhythm 68x/min, **ST changes persist**
- blood test:
  - **Troponin T- 0,0650 ng/L** ( $> 0,03$  ng/L );
  - **CK-MBm - 2,87 ng/mL** ( $< 3,77$  ng/mL )
- **Myocardial infarction (MI)??**
  - **close monitoring**
  - **repeat blood tests and ECG at 6 hrs**

## At 6 hrs

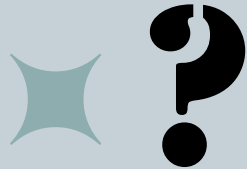


- Patient is in good condition with no chest pain
- Repeat blood test:
  - **Troponin T- 0.1800 ng/L** ( $> 0,03$  ng/L );
  - **CK-MBm - 6,33 ng/mL** ( $< 3,77$  ng/mL )
- ECG: Sinus rhythm, fr 75 x/min, ST changes resolved
- **MI??** -> regional wall motion abnormalities? -> ECHO

# Echocardiography at 24 hrs



- akinesis of LV medial segments
- hyperkinesia of the remaining segments
- **finding doesn't correspond with any coronary artery territory**
- EF 50...55%



✦ Additional investigations planned

## Exercise tolerance test (ETT), ECG monitoring



- Repeat blood test at 48 hrs: normal
- **ETT** at 48 hrs after presentation:
  - conclusion: **no symptoms or signs of ischaemia**
- **ECG**-monitoring 24 hrs - normal
  
- DGN: 1. Atypical Tako-tsubo cardiomyopathy? (TTC) 2. Multivessel coronary artery disease?
  - -> **CT angiography** at 1 month

## Follow-Up



- **CT-angiography** at 1 month– low Ca score, NO stenoses > 50%
- at 1 year presents with AF paroxysmes
- echocardiography: AF fr 115 x/min paroxysme; **EF >70%**. No regional wall motion abnormalities.
- permitted to continue with electroconvulsion therapy



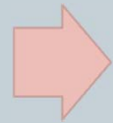
# Conclusion



- Most likely to be Tako-tsubo cardiomyopathy caused by electroconvulsion therapy
- Atypical presentation without angina pectoris
- Early arrhythmias characteristic to this syndrome
  
- AF after 1 year might be related
  
- Treatment: Metoprolol + Aspirin

# “Tako-tsubo cardiomyopathy” (TTC)

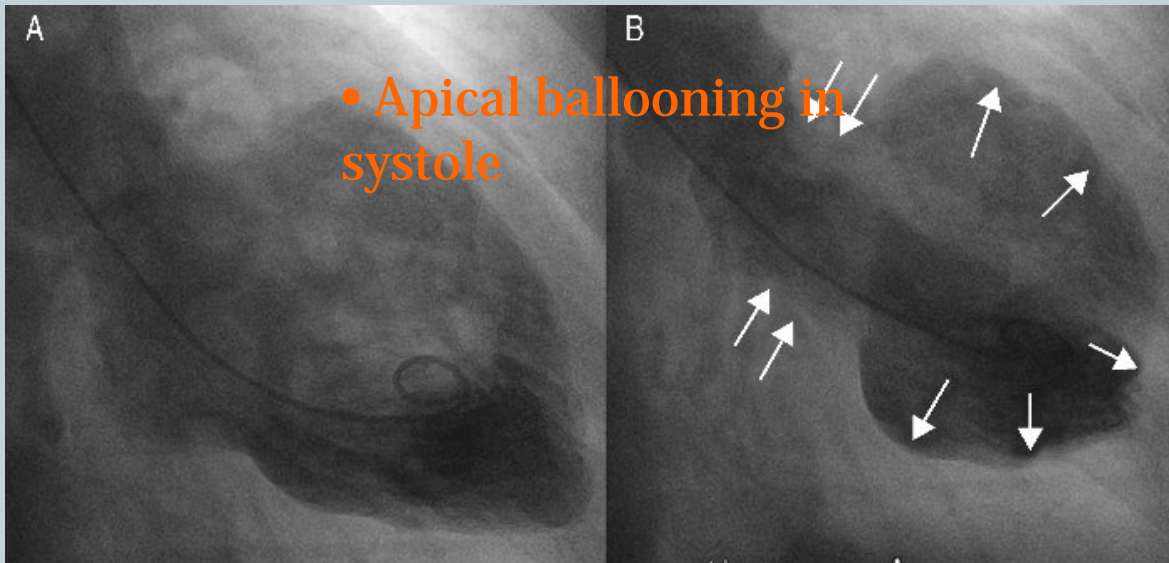
Trigger: a stressful event  
50-75%,  
administration of vasoconstrictive substances



Surge in plasma catecholamine levels



Myocardial stunning with normal coronary blood flow.



# Clinical characteristics of TTC



1. **Mainly postmenopausal females**
2. **Presentation resembles acute coronary syndrome**
3. **NO significant stenosis on coronary angiogram**
4. **Reversible**
5. **Predominantly left ventricular apical dys-/akinesia**
6. **Symmetrical dysfunction: territories of all coronary arteries affected**

# Complications



- 50 % of the pts suffer from complications, mainly within 3 days
  - long QT, arrhythmias (VT, AF, TdP)
  - acute heart failure & pulmonary oedema
  - cardiogenic shock 10%
  - disabling stroke
  - death 2% (arrhythmias, LV rupture, acute heart failure).
- 
- **Supportive therapy, spontaneous recovery**
  - Exact pathological mechanisms need to be investigated further.