

# AN UNCONSCIOUS PATIENT



CLINICAL CASE PRESENTATION  
— NORWAY —

ESIM BRIGHTON 2010

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# History



- 51 yrs female
- Single, collective-care apartments
- Schizo-Affective disorder
- Light congenital mental retardation
- Diabetes Mellitus, insulin treated
- *Medications*: Candesartan plus 1x1, Citalopram 20mgx1, Klometiazol 300mgx1, Levomepromazin 10mgx1, Olanzapin 10mgx1, Insulatard 24E, Novomix 28E
- Report of some changed behaviour during last months with agitation, paranoia, hallucinations

# Case



- Patient found unconscious by personell, last seen awake half an hour ago
- Lying on left side, traces of vomiting, palpable pulse, self-respiration
- No cramps observed, nor any bite-mark on tongue
- No medications or other drugs available
- Some vomiting during transport

# Clinical examination



Vital parameters: BP 140/65 Pulse 73 rgl Temp 36° SaO<sub>2</sub> 98%

Physical exam: Light edematous legs otherwise normal

## Neuro:

- GCS 5
- Large light reactive pupils
- Spastic muscle tonus
- Spastic jaw (trismus)
- "cog-wheel" pattern
- Spontaneous movements
- Downward Babinski
- Normal peripheral reflexes
- Less co-operative

....Differential diagnosis...??



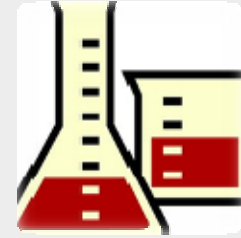
# Stable but still unconscious patient.....??



## Causes of Syncope

- Reflex-mediated
- Orthostatic hypotension
- Medications
- Psychiatric
- Neurologic
- Cardiac
- Unknown

# Investigations



Crp	8	(<10)
Leuc	11,8	(3.5-11.0)
Na	117	(137-145 mmol/L)
K	3.62	(3.5-4.5 mmol/L)
Glu	9,6	(3.3-6.1 mmol/L)
pH	7.4	(7.35-7.45)
CK	1615	(<210 U/L)
TropI	<20	(<40)
Osmolality	252	(280-300)
ASAT	176	(<35U/L)
ALAT	107	(<45U/L)
LDH	307	(<205U/L)



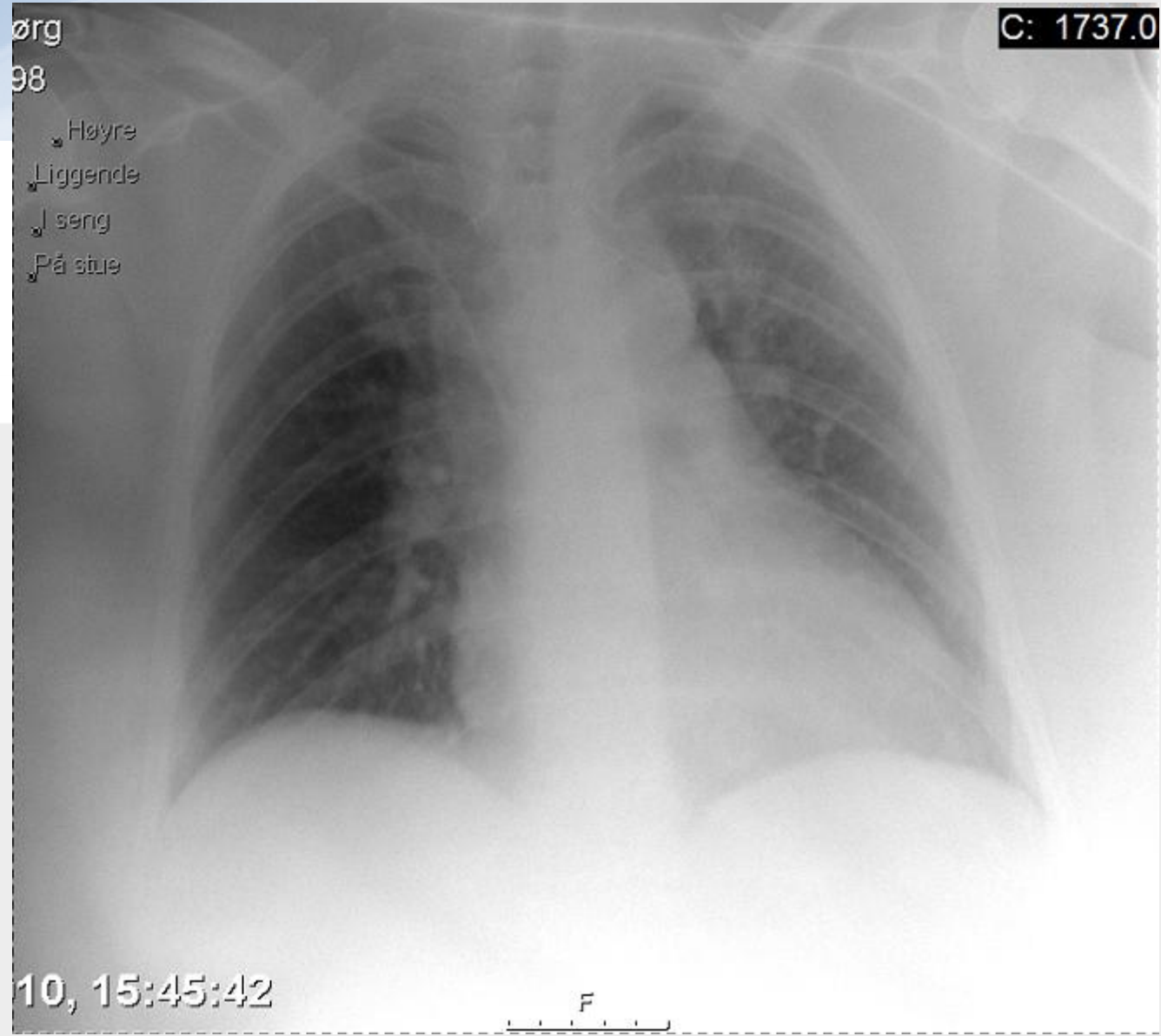
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## Clinical course....



- Fever 39.2°C
- Spastic muscles
- Sinus tachycardia
- Tremor
- Rigidity
- Lab.test:
  - CK 5000↑
  - Na 120 (normalizing)

## Actions taken...



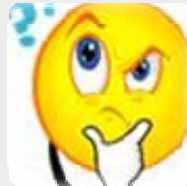
- NaCl infusion
- Dantrolene 240mg (hyperthermia/rigidity)
- Forced alkaline diuresis with  $\text{NaHCO}_3^-$ , saline and glucose (rhabdomyolysis)
- LMWH, ICU monitoring
- Removed all previous medications
- Cont alkaline diuresis with CK max value 35000

# Diagnosis and Progress....



- Unconscious patient with hyperthermia, muscle rigidity, rhabdomyolysis and tremor
- Medications including SSRI and two different antipsychotics

- Diagnosis:



- The patient was discharged after 8 days with normalization of CK values and total restoration of cerebral functions already after 2 days
- Consultation by psychiatrist during admission. All antipsychotic and SSRI medicine stopped

# Neuroleptic malignant syndrome (NMS)

- Rare but life-threatening neurologic emergency associated with use of neuroleptic agents
- Incidence range from 0.02-3% among pat using neuroleptics
- Described in all age groups, 2:1 ratio for men:women
- Mortality estimated between 10 and 20 percent
- Idiocyncratic association with neuroleptics with syndrome occurring despite any drug, dose or duration of treatment

## Drugs that can cause neuroleptic malignant syndrome

Neuroleptic agents	Antiemetic agents
Aripiprazole	Domperidone
Chlorpromazine	Droperidol
Clozapine	Metoclopramide
Fluphenazine	Prochlorperazine
Haloperidol	Promethazine
Olanzapine	
Paliperidone	
Perphenazine	
Quetiapine	
Risperidone	
Thioridazine	
Ziprasidone	

## DSM-IV Criteria

**Criteria A:** Muscle rigidity and hyperthermia associated with use of antipsychotic

**Criteria B:**

- diaphoresis
- dysphagia
- tremor
- incontinence
- Altered consciousness
- Mutism
- Tachycardia
- Elevated or labile BP
- Leucocytosis
- Lab evidence of muscle injury

**Diagnosis: A criteria and at least 2 B criteria**

## Pathogenesis

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- The cause of NMS is unknown
- Central dopamine receptor blockade and interference with nigrostriatal pathway is essential
- Direct toxic effect of neuroleptic on skeletal muscle
- Disrupted modulation of sympathetic nervous system

# Treatment

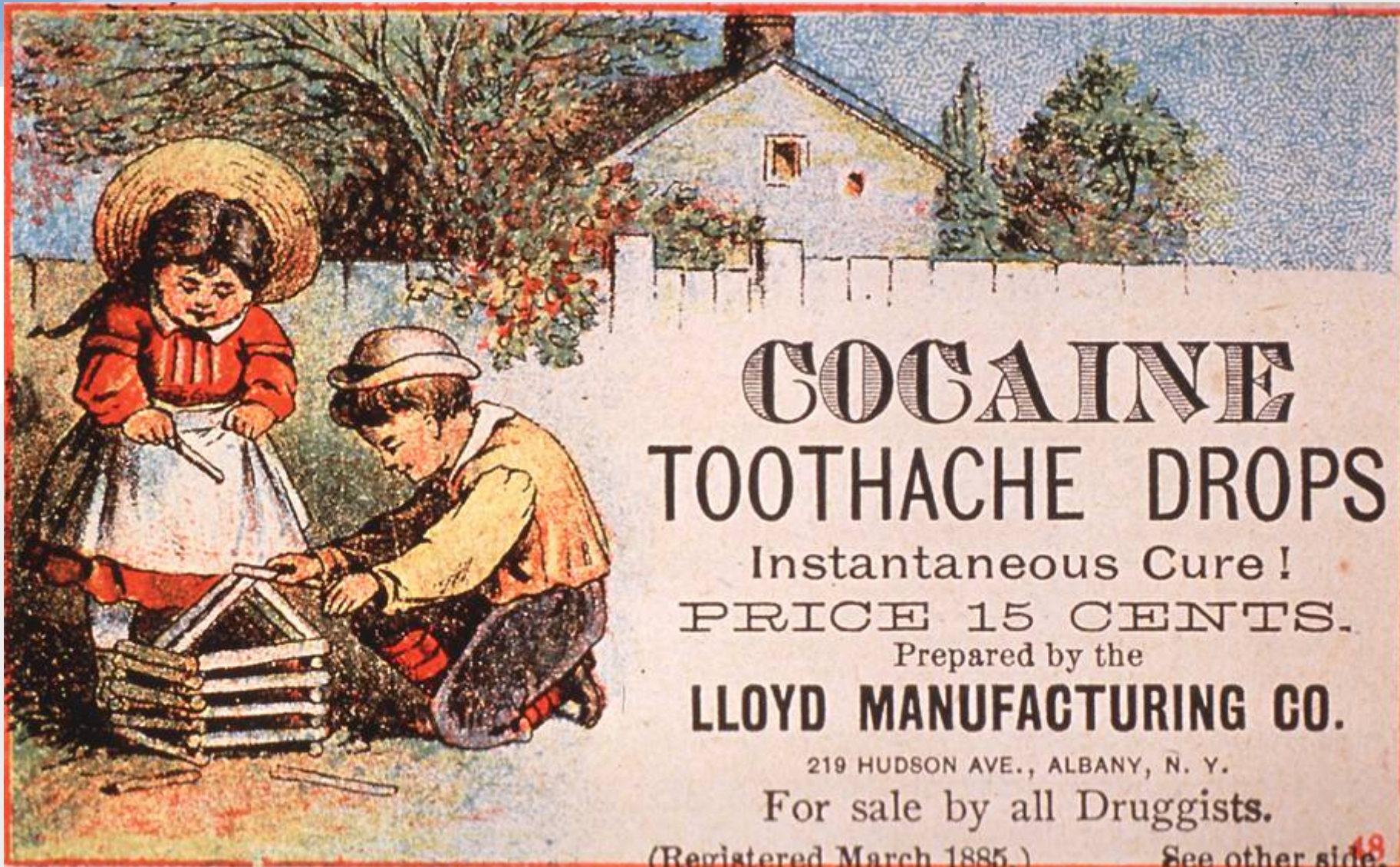


- Stop causative agent!!
- Supportive care :
  - Iv fluids
  - Lower fever
  - Urine alkalization
  - Regulation of HR and BP
  - DVT prophylaxis
- Specific treatment:
  - *Dantrolene*
  - *Bromocriptine*
  - *Amantadine*
- ECT

## Related disorders

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- Serotonin syndrome
- Malignant hyperthermia
- Malignant catatonia
- Intoxication



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## Take-home message

- MNS is a potentially life-threatening side-effect of all types of antipsychotics
- Diagnostic criteria are hyperthermia, rigidity, autonomic instability and elevated CK levels
- Antipsychotics should be stopped and patients must be treated in ICU
- All cases should be reported as drug side-effect



**THANK YOU!!!**

