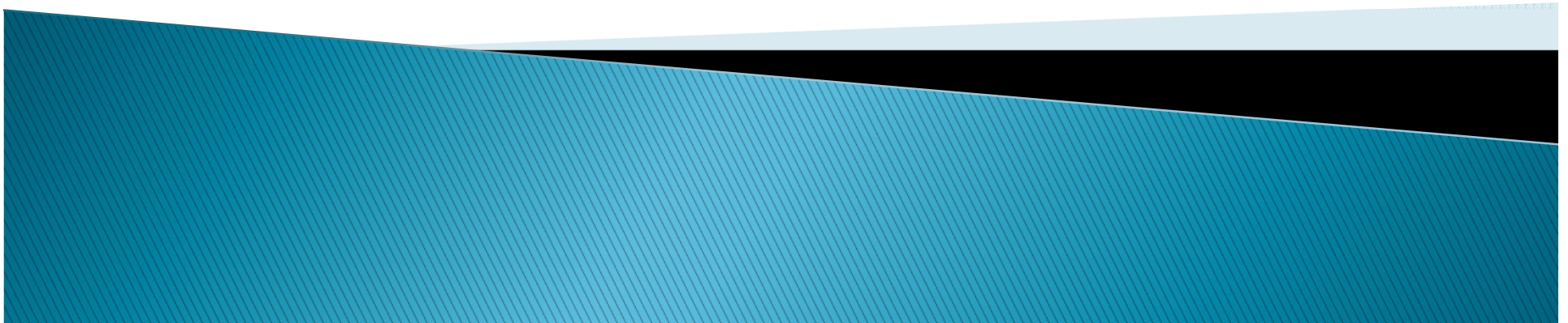


Case report

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A 69 year old female

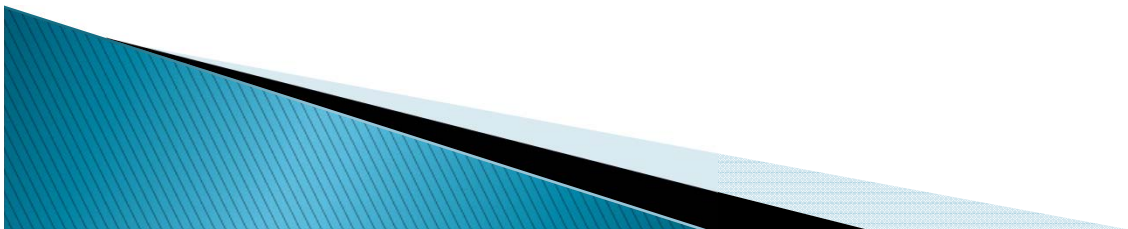
Presented to our acute care unit from hospital for chronically ill

- Continual fever over 39°C lasting 5 days
- Alteration of the overall state
- No other symptoms, no complaints
- Not reacting to combination antibiotics and antipyretics




Personal medical history


- **Alzheimer's dementia**, without internal comorbidities
- Long term medication: **donepezil 10mg**
- No allergy, non- smoker



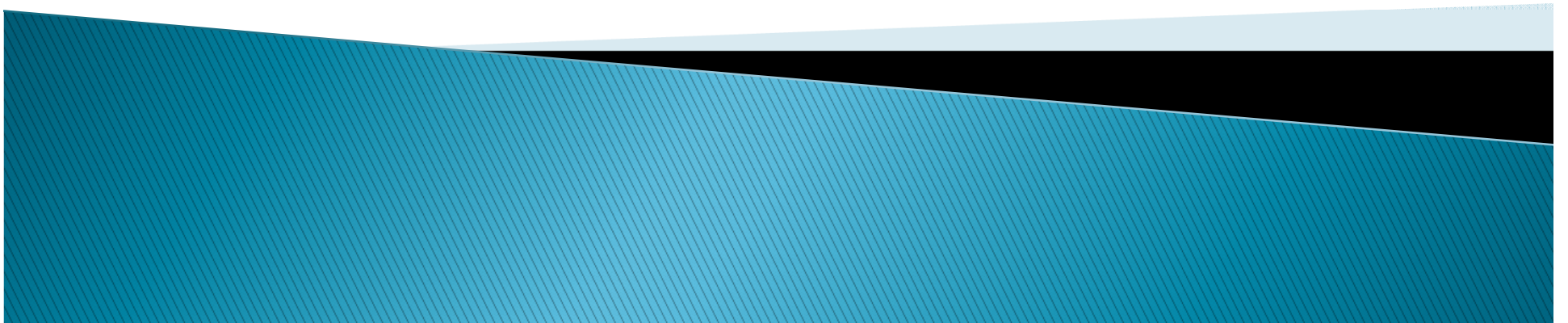
Current disease

- On admission to hospital for chronically ill, she was in **good physical condition**, communicating, **symptoms of dementia**
 - Because of leaving department the **neuroleptics** were given, based on the recommendation of a psychiatrist
 - Quetiapin 25mg, tiaprid 100mg tbl 1-1-1 with an increase in 2-2-2 tbl
 - One week later...**sudden continual fever above 39°C** with overall alteration... Neuroleptics was discontinued
 - **New in therapy:** ciprofloxacin 250mg iv 1-0-1 (4 days), cefuroxim 750mg i.v. 1-1-1 (3 days), metamizol amp i.v. 1-1-1-1, paracetamol iv.1-1-1-1, infusion of crystalloids
- 

Physical examination

- Conscious, **somnolence**, spontaneously ventilating, eupnea, SaO₂ 95%, **non-cooperating, non answering**
 - **muscle rigidity**
 - **fever 39,8 °C**
 - head + neck no pathology,
 - respiration without side phenomena
 - **HR 130/min, BP 100/80**, without murmur,
 - abdomen soft, loosely palpable, liver and lien not enlarged
 - lower limbs without swelling
 - skin clean, free of lesions or defects
- 

The cause of hyperthermia?



The cause of hyperthermia?

- Systemic infection (pneumonia, sepsis), CNS infection (meningitis, encephalitis)
- Heat stroke
- Thyrotoxicosis
- Drug intoxication (ecstasy, cocaine, metamphetamine, lithium)
- Drug related hyperthermia (SSSRI, NMS)
- Malignant hyperthermia
- Hypothalamic hemorrhage
- Withdrawal syndromes



Laboratory

- **Na 155** (136-145 mmol/l), **Cl 120** (97-108 mmol/l)
- **K 3.0** (3.6-5.4 mmol/l), **Ca 1.96** (2.15-2.65 mmol/l), **P 0.56** (0.9-1.32 mmol/l)
- **Glucose 6.23** (3.88- 5.6 mmol/l)
- **urea 13.4** (2,3-6,7 mmol/l), kreatinin 100 (44-110 umol/l)
- bilirubin 6.8 (5-19 umol/l), ALT 0.44 (0.01-0.73 umol/l), AST 0.58 (0.01- 0.67 ukat/l) , GGT 0.36 (0.1-0.9 ukat/l), ALP 0.71 (0.8-2.6 ukat/l)
- **Leu 11.8** (3-10), CRP <5 mg/l (0-5), **presepsin 484** (60-365 ng/l)
- **CK 8.46** (0,4-2,8 ukat/l), **myoglobin 305** (11-58 ug/l)
- TSH 2.91 (0,3-5) , fT4 12.3 (12-23 pmol/l)
- Lactate 0.82 (0,6-2,4 mmol/l), **pH 7.45** (7,36-7,44) pCO2 5.17, BEecf 4.0, BE 3.9, HCO3 27.2, TCO2 28.2, pO2 30.1, O2 sat 99,6



Investigations

- **EKG:** sinus rhythm, QRS 0.08, ST-T waves without abnormalities
- **Chest X rays:** no pathology
- **CT scan of the brain:** angiosclerotic encephalopathy, advanced brain atrophy
- **Neurological examination:** diffuse muscle rigidity, without lateralization, GCS 9
- **Microbiology, serology, PCR:** negative
- **Abdominal ultrasound:** negative



Key points

- Hyperthermia
- Muscle rigidity
- Quantitative impairment of consciousness
- Autonomic instability - tachycardia, hyper-, hypotension

- Neuroleptic therapy
- Dementia
- No infection detected



Diagnosis

Neuroleptic malignant syndrome

- Life threatening neurologic emergency associated with the use of neuroleptic agents
- characterized by mental status change, rigidity, fever and dysautonomia
- Incidence range from 0.02 to 3% among patients using neuroleptic agents (haloperidol, fluphenazine, chlorpromazine, clozapine, risperidone, metoclopramide, quetiapin..)
- Mortality 10%
- Risk factors: psychiatric conditions, neurologic disease, acute medical illness (trauma, infection, surgery)
- Male: female 2:1



Treatment

- Discontinuation of neuroleptics
- Physical cooling (blankets)
- Antipyretics
- Correction of mineral disbalance (infusions)

(dantrolen iv, bromocriptine, amantadine)



Course of hospitalization

- 2nd and 3th day – fever drop to 37,5-37,8°C
- 4th day – 36,6 °C, GCS 11-12, one-word answers, movement of limbs
- Since 6th day normalization of physical status, symptoms of Alzheimer's dementia



Conclusion

- To consider the benefits and risks for the patient when deploying a new medication
- Especially elderly people are more sensitive
- Consider neuroleptic malignant syndrome in patients on neuroleptic therapy with continual fever above 38°C unresponsive to antipyretics and the presence of 2 of the 4 typical symptoms (rigidity, fever, mental status change and dysautonomia)



Thank you!

