

## Treatment-resistant delirium

Female, born -37. Lived in a nursing home for people with dementia. No other chronic diseases. Was well-functioning, independent in ADL, and had insight into her dementia.

She fell in July and got a hip fracture. Preop UCG (Ecco cardiography) unremarkable. In the records confusion pre-and postoperative - climbed out of the bed, pulled out PVC and urine catheter. Treated for suspected pneumonia. Midazolam, oxazepam, and clomethiazole with various effects. Effect of letting her children visit her, despite strict visiting policy due to the pandemic. No infection was found. Discharged on August 4th, "probably better for her to come to her nursing home".

August 13th readmitted with suspicion of wound infection. Very complicated treatment of the infection partly because the patient could not cooperate with the optimal treatment. Peripheral edema - new UCG showed a silent heart infarction with EF 20%. Her delirium aggravated over the weeks, and high doses of haloperidol and diazepam were administered. Citalopram and donepezil were paused because of interactions. A psychiatrist was consulted on September 11th, adjusted the medication, but it did not work since the patient took nothing per mouth. Several injections of haloperidol and midazolam followed. Discharged on September 17th.

Several contacts with the GP the following days, hyperactive delirium, was given more midazolam and haloperidol. October 5th admitted to the clinic of psychiatry, impossible for the staff to handle her. She was given haloperidol, clomethiazole, lorazepam, diazepam, midazolam and paracetamol. Transferred to the department of medicine in her hometown on October 7th. The medications for her delirium were now lorazepam, haloperidol, and midazolam.

Information on the non-reversible situation by a geriatrician. After discharge, the GP tried zuclopenthixol (Cisordinol) and memantine (Ebixa). The patient died November 22nd, never relieved from the delirium that began July 26th.

1. What are the strategies in your hospital/hospice/practice:
  - a. to prevent delirium in your palliative patients? **No specific routine written with systematic prevention. But several approaches toward preventing: Working with the environment, few staff around the patients. Dealing with the underlying cause for admission as well as others one detects. In a geriatric ward: Comprehensive geriatric assessment. Implemented in our holistic thinking to minimize deterioration. Implemented in diverse risk assessments done when admitted to acute hospital care**
  - b. to detect a delirium? **Some practices use CAM to detect, using it as a screening.**
2. Take turns and name triggering causes of delirium. Let's see how many you can name Polypharmacy, metastasis, infection, change of environment, lab abnormalities, pain, constipation, urinretention, drugs, side effects of drugs, sleep deprivation, lack of glasses and hearing aids, procedure, anesthesia, rapid progress of underlying disease, rapid loss of functionality, hypoxia,
3. What is the treatment strategy for active delirium in your workplace?

**Discussion regarding approach; treat underlying cause if possible. But in some practices, like nursing homes, hospices, it is difficult to investigate underlying treatable causes. And for end-of-life it is not always relevant.**

  - a. First drug of choice, dose?  
**Haloperidol in several practices. In some practices haloperidol (Denmark) the nurses can start**

- the treatment (according to routine). If used, we might not dare to titrate the dose
- olanzapin - different approaches. Combination? And sometimes combination with midazolame, oxazepam or diazepam
- c. If that fails?
  - d. ...
- b. If that fails? Second choice  
risperidone, levopromazine
4. Is your treatment strategy different if the patient:
    - a. is very old? Same drugs
    - b. has Parkinson? Quetiapin, clozapine. Levomepromazine in some practices
    - c. has dementia? Depends on the type of dementia, LBD high risk. In some practices risperidon first drug of Same drugs, but drugs with anticholinergic effect, can worsen because they need that signal substance.
    - d. Is imminently dying? If distressed by the delirium
    - e. has a silent delirium? Depends on the burden of symptoms'. Looking for the cause. Risperidone better effect if antipsychotic is needed?
5. Does a patient with delirium have capacity to consent to treatment? Fluctuate, so they might be able to give consent.
  6. What is the routine at your hospice/hospital/practice when a patient with active delirium resists treatment? What are the laws and regulations? In our settings, very rare. Not treat without, but it they are in great risk causing themselves harm or others.

## Delirium from opioids?

(Case from Maria Hammarlund)

The 81-year-old woman was admitted to the hospital for further investigation of skeletal metastasis after MRI showed several metastases to the spinal column. Smoked since she was 15 years old. Further investigation concluded with lung cancer with metastasis to lymph nodes and skeleton, T2aN3M1c.

Because of pain from skeletal metastasis, especially a destructed Th12, she started with oxycodone, which during 3 days were increased to 20mg x2. She had never used strong painkillers before. She became confused and delirious; thought she was staying at a hotel and was constantly walking around trying to find her room. At a point, she also had respiratory depression because of oxycodone. She had to have one nurse following her all the time.

The dose of oxycodone was reduced to 10mg x2, in addition to that she had an epidural catheter. She did not receive any medication against the delirious condition. And after 1-2 days she was more or less back to normal. She remembered that she earlier was not herself and that it was an unpleasant experience.

1. Name drugs typically used in palliative practice that can trigger a delirium. Opioids, steroids, chemotherapy, antipsychotics, drugs for neuropatic pain

2. What is your strategy when giving opioids or other pain medications to a patient you consider prone to delirium? **Start low go slow** Drugs of first choice? **Depends on the type of pain. NSAID a good choice for skeletal pain for instance. Oxycodone a tradition in some practices, others use morphine as first opioid, by tradition.** Drugs to avoid?
3. Are you aware of any interactions between drugs commonly used in palliative medicine that could be relevant when describing opioids and benzodiazepines? **Fentanyl - flukonazol - methadone. We sometimes prescribe anyway, monitoring for side effects.**

## **Delirium in a patient with hip fracture and bone metastasis**

(Case from Pekka Haapaniemi)

Elderly 70+ male admitted to an acute geriatric ward after falling at home, which resulted in a bilateral femur fracture. Prior to fracture, lead an active life and was described as youthful and physically active for his age. The fractures were operated on. The bone had marked sclerosis and PAD returned the diagnosis of metastatic prostate cancer. CT scan showed metastatic prostate cancer (bone, lymph nodes) and multiple bilateral hip fractures. Blood tests showed an elevated PSA, all other lab values (such as blood count, CRP, sodium, potassium, Ca-ion, LD, urate, and GFR) were normal.

Bone tumor meeting recommended radiotherapy to both hips post. op. and urological consultation recommended starting the patient on hormonal castration therapy and plausibly denosumab and calcium supplement.

Due to excruciating pain that prevented even moving the patient in bed, he was started on fentanyl patch 12 ug/h that was raised to 25 ug/h after three days, then 37 ug/h after another three days. The patient had oxycodone as rapid-acting analgetic during the titration, with doses up to 80 mg per day.

When fentanyl was raised to 37 ug/h the patient became delirious. He failed to orient or follow commands and was restless, trying to remove the catheter or the i.v. drip with oxycodone. The fentanyl dose was lowered to 25 ug/h, but this had no effect. Opioids were rotated to a s.c. drip of oxycodone that seemed to give pain control. Lorazepam and haloperidol were added. All lab counts and infection parameters returned normal repeatedly.

Radiotherapy was canceled. Hormonal therapy was started, but denosumab was not, due to patient compliance issues. Rotation of haloperidol, quetiapine and risperidone had no effect. Delirium was declared terminal when the patient became unable to eat or drink. The patient was moved to a terminal care ward and died within a month.

1. With your 20/20 hindsight vision analyze the treatment provided for this patient. Would you change anything in regard of:
  - a. -Investigating reasons for the patient's delirium
  - b. -Treating the patient's pain (choice of opioid? Other ways to provide pain relief?)
2. What do you guess is this patient's life expectancy if he did not have delirium?
3. Would you consider palliative sedation for this patient?