



# Pain management in Palliative Care: A challenging Case

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May 2012


# Overview


- Case of G, a patient followed by palliative services for a long time, with evolving pain
- Brief discussion of pain medication


# Patient G

- 57 yr old man with a long history of multiple myeloma.
- Had been followed by the palliative care team, his pain being well managed with methadone for many years
- Since diagnosis had received 2 stem cell transplants and was on chemotherapy

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- Patient **G** had **extensive** bony involvement from his multiple myeloma
  - Also had chronic neuropathic back pain for which he underwent lumbar laminectomy, followed by recurrent disc herniation

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- June 2011 – review: pain well controlled with Methadone 75 mg po q8h (has been on this dose for many months)
  - Nov 2011 – had been experiencing escalating aching bone pain in his whole body, as well as neuropathic pain in his right arm and hand
  - Mobility was becoming limited due to pain

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- Between June and Nov 2011, the patient had begun using increasing doses of methadone and hydromorphone to manage his pain.
  - Based on usage calculations his dose of methadone was increased to 300 mg po q8h at the november 2011 appointment. It was suggested he come into hospital for further pain management, but he declined

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- Mr. G returned for follow up in January 2012 and was admitted to hospital in a pain crisis
  - C/O generalized, severe, 9-10/10 aching bone pain, severely limiting mobilization even with a walker.
  - Poor appetite, 50 lb weight loss
  - Anxiety – significantly related to his pain levels
  - Depression due to pain, limited QOL
  - Prognosis in the range of 2-8 weeks

# Admission Medications


- Methadone 300 mg po q8h
- Hydromorphone 24-32 mg po q1h PRN  
(patient using multiple BT doses, not effective)
- Zopiclone 15 mg po hs
- Pamidronate 90 mg monthly
- Bowel Care meds
- Adalat




# Plan for pain management :

## Ketamine Treatment


- Ketamine is dissociative anaesthetic
- Potent NMDA receptor antagonist
- NMDA receptor stimulation contributes to the pain sensitization process
- Chronic painful stimuli causing prolonged excitation of nerves produce “hyperexcitability” of neurons

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- Ketamine is a non-competitive antagonist of NMDA receptors
  - Helps prevent this “hyperstimulation”
  - Also has been shown to prevent, and reverse, the development of opioid tolerance and hypersensitivity
  - Methadone is an opioid with mixed mu opioid receptor agonist activity and NMDA receptor antagonist activity

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- Administration of oral (or SQ/IV) ketamine can greatly reduce the opioid dose as well as restoring greater receptor sensitivity to the opioid medications

## Back to the case

- DAY 1: Ketamine 25 mg po q8h started
- Methadone reduced to 150 mg po q8h
- Hydromorphone 8 mg po q1h PRN
- Mirtazapine 7.5 mg po qhs started also
- Haldol 2-5 mg po/ SQ q2h PRN for hallucinations or nausea


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- Later that day.... Still having +++ pain. Methadone increased back to 300 mg q8h and breakthrough to 40 mg po q1h PRN
  - DAY 2: Ketamine continued at 25 mg q8h
  - Methadone reduced to 150 mg po q8h
  - Mirtazapine increased to 15 mg po qhs

# DAY 3

- The previous day Mr. G used 4 PRN doses of Hydromorphone 40 mg / dose
- Still has poor pain control
- Not experiencing dissociative effects, vitals stable
  
- Ketamine increased to 50 mg po q8h
- Dexamethasone 4 mg po /SQ BID added x 5days

## Day 4

- Previous day patient used another 4 PRN doses of hydromorphone 40 mg po
- Was feeling that pain was improving
- Methadone reduced to 125 mg po q8h

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- Over the next 2 days (a weekend) Pain continued to improve, breakthroughs ranged from 0-2, hydromorphone 36 mg po, patient even went out on an afternoon pass
  - Mondays morning (day 7) : methadone reduced to 100 mg po q8h



# Day 8


- Ketamine discontinued
- Methadone maintained at 100 mg po q8h
- No breakthroughs used the day before
- Pain substantially better, patient able to comfortably ambulate with walker
- Mood substantially increased

## Days 9- 10

- Mr. G went home on a pass, did very well and was discharged from hospital with the following regime:
- Methadone 100 mg po q8h
- Hydromorphone 36 mg po q1h PRN
- Mirtazapine 15 mg po qhs
- Bowel regime, PRN zopiclone

# Follow up

- Mr. G continued to have good pain control for the next 6 weeks. Pain then began to escalate along with general physical decline
- Methadone increased to 125 mg q8h by patient in past week
- Admitted to PCU for end of life care


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- In the PCU: Methadone increased to 150 mg, and the next day 175 mg q8h PR
  - Hydromorphone changed to SQ route
  - Patient was in a terminal agitated delirium
  - Methotrimeprazine 50 mg po or sq q6h
  - Clonazepam 1 mg po or PR q8h
  - Mr. G died peacefully 2 days after admission

# Conclusion

- Most patients with cancer pain can be adequately treated with increasing doses of opioids.
- Occasionally more potent medications are required to manage difficult pain – meds such as methadone
- Ketamine is becoming more recognized in the literature as an adjuvant for difficult to manage, refractory cancer pain
- Should be used at an in hospital setting

# References

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