



## PALLIATIVE CARE CASE OF THE MONTH

### The Conscientious use of Naloxone in the Palliative Care Patient

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**Case:** RS was a 51-year-old woman, well known to the palliative care service, with metastatic breast cancer whose disease had rapidly progressed over the preceding weeks. She had known metastases to the lung and was recently diagnosed with new liver, adrenal and brain metastases. She was in the midst of completing whole brain radiation when she presented to the emergency department with complaints of generalized lethargy, impaired concentration, and worsening shortness of breath. She had been on opioids chronically for greater than one year, but recently a long acting opioid has been added to control pain and dyspnea. She was discharged four days prior on Opana ER 40mg q12h and dilaudid 4mg po q3h prn. On evaluation in the emergency department multiple etiologies for her symptoms were identified, including acute renal failure, hyponatremia, a poorly functioning liver, as well as the previously mentioned extensive metastatic disease. A CT scan of the head demonstrated no acute changes. The patient declined work up for a pulmonary embolism. She was described by the emergency physician as well as the admitting physician as drowsy but easily arousable and answering questions appropriately. Her vitals at the time of admission were BP 95/60, HR 102, RR 22, SaO<sub>2</sub> 96% on 6L of oxygen via nasal canula. The attending physician ordered 0.4mg of IV naloxone despite acknowledging that RS's mental status was improving with hydration and withholding of her long-acting opioid. There was no indication of concern for respiratory depression.

The following morning during my rounds I find RS to be in tremendous distress. She is agitated, frightened, dyspnic, complains severe pain in her legs and copious diarrhea. She is angry and describes a horrific night following the administration of naloxone and discontinuation of opioids.

**Discussion:** Naloxone is an opioid antagonist, which is indicated for complete or partial reversal of life-threatening CNS or respiratory depression induced by opioids. The goal of naloxone therapy is adequate ventilation, not a normal level of consciousness.

Opioid intoxication is classically defined as depressed mental status, depressed respiratory rate, decreased tidal volume, diminished breath sounds and miosis. The latter is not always the case, however, as concurrent use of other drugs such as anticholinergics and sympathomimetics may result in normal pupil size. (1) The best predictor of opioid poisoning is a respiratory rate less than 12.

Unfortunately, naloxone is often inappropriately used in the hospital setting when the above indications have not been met. The administration of naloxone to a patient physiologically dependant on opioids will cause an abrupt return of pain and can precipitate withdrawal symptoms such as anxiety, irritability, myalgias, vomiting, diarrhea and rarely even life threatening tachycardia, hypertension, cardiovascular collapse and pulmonary edema. (2)

Prior to administration of naloxone the goals of therapy should be considered. If the CNS or respiratory depression is not life threatening, in other words if the patient is easily arousable and ventilation is adequate, then naloxone is not required. If opioids are felt to be a factor in alteration of consciousness, such as the above case, a simple down titration of opioids and/or withholding of the long-acting opioid is adequate and compassionate therapy. For some patients the goal of adequate symptom relief may supersede the prolongation of life, and in these circumstances, sedation or respiratory depression may be an acceptable side effect of effective symptom management. It should be noted that naloxone is not indicated for patients on opioids who are actively dying (prognosis measured in hours to days) as altered mentation and respiratory changes are part of the dying process.

If the degree of CNS depression or hypoventilation is deemed to be critical enough to warrant the use of an opioid antagonist, naloxone can be utilized in a cautious and controlled manner to minimize adverse effects from the drug. The first step is to dilute 0.4mg (one ampule) of naloxone to a total volume of 10ml with normal saline (1ml = 0.04mg naloxone). Administer 0.04mg IV q2min until the patient is responsive or a respiratory rate of greater than 12 is achieved. (3) Typically a response is noted with 0.08 – 0.16mg of naloxone, the patient's breathing becomes less shallow and the level of arousal increases. The duration of action of naloxone is shorter (only 20-90 min) than the duration of most short acting opioids, so repeat doses or a continuous infusion of naloxone may be required as well as continuous close monitoring of the patient.(4)

**Resolution of the case:** Unfortunately, due to the very advanced nature of RS's disease her condition continued to rapidly decline, her level of alertness continued to diminish and her dyspnea worsen. The medical team was all in agreement that RS was now in the active phase of dying. Together with her family, the decision was made to focus solely on comfort.

*Personal details in the case published have been altered to protect patient privacy.*

For palliative care consultations please contact the Palliative Care Program at PUH/MUH, 647-7243, beeper 8511, Shadyside Dept. of Medical Ethics and Palliative Care, beeper 412-647-7243 pager # 8513, Perioperative/ Trauma Pain 647-7243, beeper 7246, UPCI Cancer Pain Service, beeper 644 –1724, Interventional Pain 784-4000, Magee Women's Hospital, beeper 412-647-7243 pager #: 8510, VA Palliative Care Program, 688-6178, beeper 296. Hillman Outpatient: 412-692-4724. For ethics consultations at UPMC Presbyterian-Montefiore and Children's page 958-3844. With comments about "Case of the Month" call Dr. Robert Arnold at (412) 692-4834.



*(Resolution of the case Cont.)*

To better control her dyspnea she was initiated on a continuous infusion of opioids and up titration was required daily. She died one week following admission. Sadly, much of her final wakeful hours were spent in extreme distress and discomfort secondary to an unnecessary dose of naloxone. Simple hydration and judicious use of her opioids would have served her well in her final days.

**References:**

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