Palliative and Supportive Care (2010), **8**, 235.
© Cambridge University Press, 2010 1478-9515/10 $20.00
doi:10.1017/S1478951509990988

ESSAY/PERSONAL REFLECTIONS

Blaming the messenger and not the message

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The cornerstone of science is the experiment. The experiment is based on comparing the outcomes of two otherwise identical situations which have only one difference between them – the variable. If there is a difference between the outcomes then the single variable must be the reason. This in a nutshell is the rationale of evidence based medicine.

A 39year-old cytologist with breast cancer had presented six months previously with a cancerous swelling in her left breast. She received six cycles of adriamycin-based chemotherapy. A restaging computed tomography (CT) scan, however, revealed multiple new lung nodules. Four cycles of taxotere chemotherapy failed and the lung lesions became virtually confluent. She was hospitalized with increasing dyspnea for consideration of a further trial of chemotherapy. Oxygen and steroids partially helped. She was terrified and gasping. Morphine was started, initially in boluses which provided immediate relief. After a few days the dyspnea and panic returned and continuous intravenous morphine together with methotrimeprazine was commenced. She died peacefully 36 hours later.

Heated discussion followed among the clinicians. The treating consultant was convinced that the morphine killed her – or at least hastened her death unnecessarily and precluded a further trial of chemotherapy. Others thought it was the cancer that killed her. How can one do a randomized study at the end of life? (Tiernan et al., 2008)

Morphine is an excellent drug for treating dyspnea of the terminally ill. Panting at 40 respirations per minute might remove heat and reduce carbon dioxide but does little for efficient oxygenation. In a lung filled with metastases the respiratory drive is in part pathological – of no physiological use, like the dry rasping cough of a bronchial tumor. Dyspnea, which mirrors drowning, is associated with anxiety and panic. Morphine is marvelous – it is anxiolytic and it slows the respiratory rate. One can see it work before one's own eyes. I cared for a similar case where we actually measured the oxygen saturation before and after morphine administration and noted the saturation rise after the opiate – the breathing slowed, inspiration was more coordinated, and there was a larger tidal volume.

The most common mistake with morphine is as follows. The clinician must distinguish between the side-effects of morphine and the symptoms of narcosis (overdose). The *sine qua non* of morphine narcosis is an *inappropriately* lowered respiratory rate. 'Inappropriate' that is, for the given clinical circumstance resulting in carbon dioxide retention and hypoxemia. Drowsiness, miosis, constipation, and delirium by themselves are *not* evidence of narcosis. The only arguments about morphine and dyspnea are whether other opioids are as effective and which mode of delivery is optimal.

In our case, the treating oncologist made two clinical errors. The first was to conflate drowsiness with morphine narcosis. The second was to make an incorrect clinical assessment – the patient was in fact dying imminently, irreversibly, and physiologically of cancer. (Wein, 2008)

Morphine used knowledgably does not kill.

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https://doi.org/10.1017/S1478951509990988 Published online by Cambridge University Press