

LETTER TO THE EDITOR

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THE CLOSE INTERACTION BETWEEN MEDICATIONS USED FOR PAIN MANAGEMENT AND THYROID FUNCTION

Dear Editor:

The recent article by Matoushek et al.¹ regarding the loss of antinociceptive effectiveness of morphine and oxycodone following titration of levothyroxine was highly interesting. Interestingly, recent data suggest a close association between opioid pain management and thyroid function.

For instance, Garabal et al.² have recently demonstrated the presence of opioid-binding sites in thyroid tissue. As a result, opioids such as morphine have an attenuating effect on serum thyroid-stimulating hormone (TSH) levels.³ Morphine mediates this negative effect by enhancing negative feedback sensitivity to T₃ and T₄. Similarly, thyroxine attenuates the duration of morphine-induced analgesia. However, it increases the native pain sensitivity as a result of augmentation of the number of thyroid receptors.⁴ In fact, thyroid hormones modulate phospho-Erk1/2 pathway. As a result, they protect astrocytes from morphine-induced cytotoxicity and apoptosis.⁵

As mentioned above, the pituitary-thyroid axis is affected in patients on opioids. As a result, the withdrawal of opioids results in lower TSH levels in the acute phase as well as a month after the opioids are stopped.⁶

As a result, individuals who have stopped opioids recently should be screened for thyroid disorders. Similarly, opioid dextoxification under anesthesia can result in attenuated TSH and free T₃ and T₄ levels.⁷

The above examples illustrate the close interaction between opioids used in pain management and thyroid function. It is clearly understandable that patients on chronic opioid therapy need to be monitored closely for their thyroid function.

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