

RGH Pharmacy E-Bulletin

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A joint initiative of the Patient Services Section and the Drug and Therapeutics Information Service of the Pharmacy Department, Repatriation General Hospital, Daw Park, South Australia. The RGH Pharmacy E-Bulletin is distributed in electronic format on a weekly basis, and aims to present concise, factual information on issues of current interest in therapeutics, drug safety and cost-effective use of medications.

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Hypogonadism and osteoporosis with long-term opioids

Opioid induced hypogonadism has been reported to occur in patients receiving long term opioid therapy. The reported prevalence of opioid induced hypogonadism ranges from 21-86%. The risk may be higher in men; in those receiving a larger dose of opioids (dose related); and can occur whether the opioids are administered orally, transdermal, intravenously or intrathecally.

The signs and symptoms of hypogonadism include flushing, sweating, decreased libido, depression and anxiety, low energy levels, loss of muscle mass and strength, infertility, and osteoporosis and fractures in both men and women; decreased erectile dysfunction in men; and abnormal menses in women.

Opioids modulate gonadal function primarily by acting on opioid receptors in the hypothalamus. This leads to the decreased release or disruption of the normal pulsatility of gonadotrophin releasing hormone secretion, resulting in a reduction of the release of luteinising hormone and follicle stimulating hormone from the pituitary gland, and of testosterone or oestradiol from the gonads.

Hypogonadism is a common secondary cause of osteoporosis in men, occurring in up to 20% of men with symptomatic vertebral fractures and 50% of elderly men with hip fractures.

Several studies have revealed an association between opioids and risk of fracture. A meta-analysis based on six studies concluded that opioids were associated with increased fractures (OR 1.38 , CI 1.15 - 1.66), although the authors pointed out the need for additional large prospective studies that minimize selection bias and provide more accurate measures of fracture risk.

Management of opioid induced hypogonadism

- Consider strategies that allow opioid dose reduction (e.g. concomitant non-opioid analgesics).
- Consider non-opioid analgesics or non-pharmacologic pain management options (e.g. TENS, behaviour therapies, radiofrequency, nerve stimulation).
- Hypogonadism may occur with different degrees with different opioids in any individual patient; therefore, consider opioid rotation to potentially find an opioid that induces minimal or no hypogonadism for a particular patient.
- Consider assessment of gonadal function.
- Monitoring of bone mineral density in patients at risk of osteoporosis currently taking long term opioid therapy.

For patients who receive long term opioid therapy, it is important to recognise and manage endocrine adverse effects. These adverse effects should be considered when weighing the risks and benefits of long term opioid therapy in comparison with other pain management options, such as behavioural therapies and non-opioid pharmacologic agents.

This E-Bulletin is based on work by Tricia Warrick, Senior Pharmacist, DATIS, RGH

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