Perioperative Melatonin Use

Jonathan Jarratt

Christchurch Hospital, Christchurch, New Zealand

A review of perioperative uses of melatonin and its analogues is presented with reference to the underlying physiology and pharmacology. Consideration is also given to the patient already medicated with melatonin.

Melatonin is a substance chiefly produced by the pineal gland and has a key role in the sleep-wake cycle. It also has an important antioxidant role.

Exogenous melatonin has a short half life and is available in a range of preparations. Newer analogues targeted for the recently discovered melatonin MT1 and MT2 receptors have also been developed.

Established roles for exogenous melatonin administration include as a resynchronisation agent in jet-lag and uses in other areas of sleep disturbance.

Perioperatively, melatonin has been used with success as a premedicant, sedative and analgesic. It has also been shown to decrease paediatric emergence delirium. Roles of melatonin relating to its antioxidant activity are being evaluated in the fields of sepsis and reperfusion injuries.

Patients currently receiving melatonin supplementation would appear to be best to continue with the medication which may well have extra benefits perioperatively.

In conclusion, melatonin and its analogues will be increasingly seen in patients presenting perioperatively and the same drugs also show great potential for de novo perioperative use. New analogues of melatonin will only increase the research base in this exciting field.