A Practical Guide to Melatonin for Insomnia

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What is melatonin?
- A hormone produced in the pineal gland

Circadin
Prolonged Release
2mg

Pharmacy
Prepared Rapid-release
3mg

Melatonin

What is chronic insomnia?
- Difficulty falling or staying asleep.
- Even when there is a reasonable chance to do so.
- Occurs more than three nights per week.
- Causes some sort of distress.

Disclosures
- Speaker at Eisai sponsored Event
- Speaker at Aspen Pharma sponsored Events

Associations of Insomnia
- Pain
- Psychiatric disease
- Neurological disorders
- Hypertension
- Heart disease
- Respiratory disorders
- GI disorders
- GU disorders

Taylor, Sleep, 2007

Li et al., Circulation, 2014
Pharmacotherapy for Insomnia

Glass et al. sedative hypnotics in older people with insomnia: meta-analysis of risks and benefits, BMJ, 2005

From the same...

Number needed to treat: 13
Number needed to harm: 6

Drugs and falls

"...almost 20 000 of these injurious falls would be related to benzodiazepine use..."
"...nearly 1800 deaths yearly in France could be attributed to benzodiazepine-related injurious falls."

Efficacy data for melatonin (prolonged-release)

So what is the evidence for melatonin?
Efficacy data for melatonin (prolonged-release)

Table 7: Pittsburgh Sleep Quality Index (PSQI) measures. Clinical Global Impressions of Improvement (CGI) and World Health Organization-5 index in the ASR age group

<table>
<thead>
<tr>
<th>Measure</th>
<th>CGI 1</th>
<th>CGI 2</th>
<th>CGI 3</th>
<th>CGI 4</th>
<th>CGI 5</th>
<th>CGI 6</th>
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</thead>
<tbody>
<tr>
<td>PSQI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1.0</td>
<td>1.5</td>
<td>2.0</td>
<td>2.5</td>
<td>3.0</td>
<td>3.5</td>
</tr>
<tr>
<td>Disturbance</td>
<td>1.0</td>
<td>1.5</td>
<td>2.0</td>
<td>2.5</td>
<td>3.0</td>
<td>3.5</td>
</tr>
<tr>
<td>Sleep latency</td>
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<td>1.5</td>
<td>2.0</td>
<td>2.5</td>
<td>3.0</td>
<td>3.5</td>
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<tr>
<td>Habitability</td>
<td>1.0</td>
<td>1.5</td>
<td>2.0</td>
<td>2.5</td>
<td>3.0</td>
<td>3.5</td>
</tr>
<tr>
<td>Efficiency</td>
<td>1.0</td>
<td>1.5</td>
<td>2.0</td>
<td>2.5</td>
<td>3.0</td>
<td>3.5</td>
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<tr>
<td>Daytime naps</td>
<td>1.0</td>
<td>1.5</td>
<td>2.0</td>
<td>2.5</td>
<td>3.0</td>
<td>3.5</td>
</tr>
<tr>
<td>PSQI</td>
<td>1.0</td>
<td>1.5</td>
<td>2.0</td>
<td>2.5</td>
<td>3.0</td>
<td>3.5</td>
</tr>
</tbody>
</table>

Efficacy data for melatonin (prolonged release)

Melatonin (prolonged-release): evidence for harm

Is it safe?

Healthcare 2018; 6(1):
Long-Term Melatonin Therapy for Adolescents and Young Adults with Chronic Sleep Onset Insomnia and Late Melatonin Onset: Evaluation of Sleep Quality, Chronotype, and Lifestyle Factors Compared to Age-Related Randomly Selected Population Cohorts

- 7 year outcomes data.
  - Generally safe
  - Some difficulty withdrawing after long use

**Melatonin may interfere with ovulation, not recommended in pregnancy.
Four factor model for insomnia

Gold standard therapy?

- Cognitive behavioural therapy.
  - Highly successful
  - Expensive (Effort/Time/Money)

- Combine sleep hygiene/light therapy/‘primitive’ sleep therapy with or without a hypnotic.

A Randomized, Placebo-Controlled Trial of Online Cognitive Behavioral Therapy for Chronic Insomnia Disorder Delivered via an Automated Media-Rich Web Application


Resources

- Online CBT courses:
  - Sleepio – $$$
  - Shut – $$$

- Online resources:
  - SleepHealthFoundation.org.au

Jet-lag

<table>
<thead>
<tr>
<th>City</th>
<th>Time (local)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paris</td>
<td>6:00am</td>
</tr>
<tr>
<td>Perth</td>
<td>1:00pm</td>
</tr>
<tr>
<td>New York</td>
<td>1:00am</td>
</tr>
</tbody>
</table>

- Try to entrain the body clock prior to travel.
- Melatonin is useful in ‘re-setting’ the body clock.
- Important to use natural light to suppress the am production in conjunction with nocturnal dosing.
Take home messages:

• Insomnia is common and serious
• Melatonin comes in many forms
  • There is some evidence that prolonged-release melatonin is beneficial
• Pharmacotherapy in isolation is usually not a good solution to insomnia
• There are emerging online resources that can help patients.
• Jetlag requires planning,
  • Melatonin dosing and light exposure are equally important.