

ABSTRAK

Insomnia merupakan gangguan tidur yang dapat menurunkan kualitas hidup, produktivitas, serta meningkatkan risiko berbagai masalah kesehatan. Melatonin merupakan hormon endogen yang berperan dalam mengatur ritme sirkadian dan telah banyak digunakan sebagai terapi insomnia. Perkembangan teknologi sediaan farmasi menghasilkan berbagai bentuk sediaan oral berbasis melatonin, seperti tablet *immediate-release* (IR), tablet *extended-release* (ER), kapsul, tablet *orodispersible* (ODT), dan oral spray, yang memiliki karakteristik farmasetik, bioavailabilitas, dan efektivitas terapi yang berbeda. Penelitian ini bertujuan untuk menganalisis perbandingan karakteristik sediaan, bioavailabilitas, dan efektivitas berbagai sediaan oral berbasis melatonin dalam terapi insomnia. Penelitian ini merupakan penelitian kepustakaan (*library research*) dengan metode *Narrative Literature Review* (NLR). Penelusuran literatur dilakukan melalui basis data Google Scholar, PubMed, dan ScienceDirect menggunakan kata kunci yang berkaitan dengan melatonin, sediaan oral, dan insomnia. Artikel diseleksi berdasarkan kriteria inklusi dan eksklusi dengan rentang publikasi tahun 2016–2026. Data yang memenuhi kriteria diekstraksi, kemudian dianalisis secara deskriptif naratif berdasarkan karakteristik sediaan, bioavailabilitas, farmakokinetik, serta efektivitas terapi. Hasil kajian menunjukkan bahwa setiap bentuk sediaan oral berbasis melatonin memiliki karakteristik yang berbeda. Tablet IR dan oral spray memberikan onset kerja yang lebih cepat sehingga lebih sesuai untuk mengatasi kesulitan memulai tidur (*sleep onset insomnia*). Sebaliknya, tablet ER, tablet *prolonged-release* (PR), dan kapsul *sustained-release* (SR) mampu mempertahankan kadar melatonin lebih lama sehingga lebih efektif dalam membantu mempertahankan tidur (*sleep maintenance insomnia*). Tablet ODT memberikan kemudahan penggunaan, terutama bagi pasien dengan kesulitan menelan, meskipun bukti klinisnya masih terbatas. Perbedaan mekanisme pelepasan obat dan profil farmakokinetik memengaruhi bioavailabilitas serta efektivitas terapi masing-masing sediaan.

Kata kunci: melatonin, insomnia, sediaan oral, bioavailabilitas, *Narrative Literature Review*.

ABSTRACT

Insomnia is a sleep disorder that can reduce quality of life, decrease productivity, and increase the risk of various health problems. Melatonin is an endogenous hormone that regulates the circadian rhythm and has been widely used as an alternative therapy for insomnia. Advances in pharmaceutical dosage form technology have led to the development of various oral melatonin formulations, including immediate-release (IR) tablets, extended-release (ER) tablets, sustained-release (SR) capsules, orodispersible tablets (ODTs), and oral sprays. These dosage forms differ in their pharmaceutical characteristics, bioavailability, pharmacokinetic profiles, and therapeutic effectiveness. This study aimed to compare the characteristics, bioavailability, and therapeutic effectiveness of oral melatonin-based dosage forms in the treatment of insomnia. This study employed a library research design using the Narrative Literature Review (NLR) method. Literature was searched through Google Scholar, PubMed, and ScienceDirect databases using keywords related to melatonin, oral dosage forms, and insomnia. Articles published between 2016 and 2026 were selected based on predetermined inclusion and exclusion criteria. The selected studies were extracted and analyzed descriptively through a narrative approach based on dosage form characteristics, bioavailability, pharmacokinetic properties, and therapeutic effectiveness. The findings indicate that each oral melatonin dosage form has distinct characteristics. Immediate-release tablets and oral sprays provide a faster onset of action, making them more suitable for patients experiencing sleep-onset insomnia. In contrast, extended-release tablets, prolonged-release tablets, and sustained-release capsules maintain plasma melatonin concentrations for a longer duration and are therefore more effective in managing sleep-maintenance insomnia. Orodispersible tablets offer greater convenience, particularly for patients with swallowing difficulties, although clinical evidence regarding their effectiveness remains limited. Differences in drug-release mechanisms and pharmacokinetic profiles contribute to variations in bioavailability and therapeutic outcomes among oral melatonin dosage forms.

Keywords: melatonin, insomnia, oral dosage forms, bioavailability, Narrative Literature Review.