

Melatonin Potentiates the Therapeutic Effects of Metformin in Women with Metabolic Syndrome

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Abstract

The pathophysiological mechanism behind metabolic syndrome is the resistance of many tissues to the regulatory effect of insulin. Many reports emerged recently about the effect of melatonin in increasing the responsiveness of tissues to the effect of insulin in diabetic patients, suggesting the use of this dietary supplement as adjuvant treatment in those patients. No clinical data on the pharmacological use of this supplement in this respect were available to support its beneficial role in metabolic syndrome.

Results: The treatment of patients with metabolic syndrome using metformin–melatonin showed an improvement in most metabolic syndrome components such as fasting serum glucose (FSG), lipid profile, and body mass index (BMI), in addition to a reduction in insulin resistance and hyperinsulinemia. Simultaneously, there were increments in serum uric acid (UA), leptin, prolactin (PRL), and estradiol levels, while serum progesterone level decreased. Furthermore, patients treated with metformin–placebo showed less improvement in the studied parameters compared to that produced due to the inclusion of melatonin in the treatment protocol.

Conclusion: Melatonin improves the effects of metformin on several components of metabolic syndrome such as FSG, lipid profile, and BMI, in addition to insulin resistance and hyperinsulinemia, compared to metformin alone. Pharmacological doses of melatonin may produce additive effect to metformin when utilized for long-term use in patients with MBS with possibility of reducing the dose of metformin to eliminate side effects.



Biography

Sattar Jabir Abood Al-Jubouri is currently working as lecturer and a member of academic committee at the Department of Pharmacology and Toxicology, College of Pharmacy, Al Farahidi University, Baghdad, Iraq. He obtained his PhD degree (Pharmacology and Toxicology) in 2017 from the College of Pharmacy, University of Baghdad for a thesis entitled: The Therapeutic Effects of Calcium Fructoborate and Sodium Tetraborate as Adjuvant Supplements with Etanercept In Iraqi Patients with Active Rheumatoid Arthritis. Dr, Al-Jubouri having 17 years working as a clinical pharmacist, head of pharmacy department, head of continuous medical and pharmaceutical education, head of medical scientific affairs, and a manager of toxicology and drug information center in Iraqi hospitals, with 3 years of university teaching at the college of pharmacy and college of medicine in Iraqi universities. Also, participated in many local medical and pharmaceutical conferences. He has published seven scientific papers till now.

Publications

1. Melatonin Potentiates the Therapeutic Effects of Metformin in Women with Metabolic Syndrome
2. Comparing the Effect of Dexamethasone, Normal Saline, and Metoclopramide on Prevention of Postoperative Nausea, Vomiting and Pain in Patient Undergoing Laparoscopic Cholecystectomy or Open Appendectomy: A Randomized Clinical Trial
3. Antimicrobial susceptibility pattern isolated from different clinical samples in Baghdad hospitals
4. Effect of digoxin ophthalmic solutions on the intraocular pressure in rabbits

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