

FULL TEXT LINKS



Randomized Controlled Trial [Ir J Med Sci](#). 2018 Feb;187(1):85-89.

doi: 10.1007/s11845-017-1638-4. Epub 2017 May 30.

Molecular hydrogen affects body composition, metabolic profiles, and mitochondrial function in middle-aged overweight women

D Korovljev ¹, T Trivic ¹, P Drid ¹, S M Ostojic ^{2 3 4}

Affiliations

PMID: 28560519 DOI: [10.1007/s11845-017-1638-4](#)

Abstract

Background: Molecular hydrogen (H₂) effectively treats obesity-related disorders in animal models, yet no studies have investigated the effectiveness and safety of H₂ for improving biomarkers of obesity in humans.

Aim: In this double blind, placebo-controlled, crossover pilot trial, we evaluated the effects of H₂ intervention on body composition, hormonal status, and mitochondrial function in ten (n = 10) middle-aged overweight women.

Methods: Volunteers received either hydrogen-generating minerals (supplying ~6 ppm of H₂ per day) or placebo by oral administration of caplets for 4 weeks. The primary end-point of treatment efficacy was the change in the body fat percentage from baseline to 4 weeks. In addition, assessment of other body composition indices, screening laboratory studies, and evaluation of side effects were performed before and at follow-up. Clinical trial registration www.clinicaltrials.gov, ID number [NCT02832219](#).

Results: No significant differences were observed between treatment groups for changes in weight, body mass index, and body circumferences at 4-week follow-up (P > 0.05). H₂ treatment significantly reduced body fat percentage (3.2 vs. 0.9%, P = 0.05) and arm fat index (9.7 vs. 6.0%, P = 0.01) compared to placebo administration, respectively. This was accompanied by a significant drop in serum triglycerides after H₂ intervention comparing to placebo (21.3 vs. 6.5%; P = 0.04), while other blood lipids remained stable during the study (P > 0.05). Fasting serum insulin levels dropped by 5.4% after H₂ administration, while placebo intervention augmented insulin response by 29.3% (P = 0.01).

Conclusions: It appears that orally administered H₂ as a blend of hydrogen-generating minerals might be a beneficial agent in the management of body composition and insulin resistance in obesity.

Keywords: Mitochondrial dysfunction; Molecular hydrogen; Obesity.

Related information

[MedGen](#)

[PubChem Compound \(MeSH Keyword\)](#)

LinkOut – more resources

Full Text Sources

[Springer](#)

Other Literature Sources

[The Lens - Patent Citations](#)

[scite Smart Citations](#)

Medical

[ClinicalTrials.gov](#)