DHEA replacement in women with adrenal insufficiency--pharmacokinetics, bioconversion and clinical effects on well-being, sexuality and cognition.

Abstract

Standard replacement for adrenal insufficiency (AI) consists of glucocorticoids and mineralocorticoids while DHEA deficiency is routinely ignored. Thus, AI represents the ideal pathophysiologic model of isolated DHEA deficiency. We investigated the effects of DHEA replacement in 24 women with primary and secondary AI employing a double blind, placebo-controlled, randomized crossover design. A DHEA dose of 50 mg/d was chosen based on preceding single-dose pharmacokinetics and bioconversion studies. Each patient received four months of treatment with DHEA and four months placebo, with a one-month washout period. Measurements included serum steroid hormones, somatotropic parameters and psychometric assessment of well-being, mood, cognition and sexuality. Treatment with DHEA raised the initially low serum concentrations of DHEA, DHEAS, androstenedione, and testosterone into the normal range. DHEA induced a slight increase in serum IGF-I, but only in patients with primary AI, suggesting a growth hormone-mediated effect. DHEA treatment significantly improved overall wellbeing as well as scores for depression, anxiety, and their physical correlates. Furthermore, DHEA significantly increased both sexual interest and the level of satisfaction with sex. DHEA replacement had no influence on the cognitive performance, which was already on a high level at baseline. In conclusion, DHEA replacement improves well-being and sexuality in women with adrenal insufficiency. If this is due to a direct effect of DHEA on the brain, an indirect effect via increased androgen synthesis, or both, remains to be elucidated. Long-term studies in patients of both sexes are needed to further define the role of DHEA in standard replacement for adrenal insufficiency. PMID:11196420