A clinical study on the short-term effect of berberine in comparison to metformin on the metabolic characteristics of women with polycystic ovary syndrome.


Source

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Abstract

Objective Polycystic ovary syndrome (PCOS) is a frequent reproductive and metabolic disorder associated with insulin resistance (IR). Berberine (BBR) is an isoquinoline derivative alkaloid extracted from Chinese medicinal herbs that has been used as an insulin sensitizer. BBR may have a potential therapeutic value for PCOS. The aim of this study was to evaluate the effects of BBR in comparison to metformin (MET) on the metabolic features of women with PCOS. Design and methods Eighty-nine subjects with PCOS and IR subjects were randomized into one of three treatment groups: BBR+compound cyproterone acetate (CPA; n=31), MET+CPA (n=30), and placebo+CPA (n=28) for 3 months. Clinical characteristics of the women and metabolic and hormonal parameters were assessed before and after the period of treatment. Results Treatment with BBR in comparison to MET showed decrease in waist circumference and waist-to-hip ratio (WHR; P<0.01), total cholesterol (TC), triglycerides (TG), and low-density lipoprotein cholesterol (LDLC; P<0.05) as well as increase in high-density lipoprotein cholesterol (HDLC) and sex hormone-binding globulin (SHBG; P<0.05). Similarly, treatment with BBR in comparison to placebo showed decrease in WHR, fasting plasma glucose, fasting insulin, homeostasis model assessment for IR, area under the curve of insulin, TC, LDLC, and TG (P<0.05) as well as increase in HDLC and SHBG (P<0.01). Conclusions Intake of BBR improved some of the metabolic and hormonal derangements in a group of treated Chinese women with PCOS. Main effects could be related to the changes in body composition in obesity and dyslipidemia. Further controlled studies are needed for the assessment of the potential favorable metabolic effects of BBR in women with PCOS.