

Aloe barbadensis Mill. formulation restores lipid profile to normal in a letrozole-induced polycystic ovarian syndrome rat model

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ABSTRACT

Background Polycystic ovarian syndrome (PCOS), characterized by ovulatory infertility and hyperandrogenism, is associated with metabolic complications such as dyslipidemia, insulin resistance and endothelial dysfunction. Almost 70% PCOS women have abnormal serum lipid levels (dyslipidemia) and 50% of these women are obese. Several classes of pharmacological agents have been used to manage dyslipidemia. However, studies have shown adverse effects associated with these drugs. In the light of alternate therapy, many medicinal herbs have been reported to show hypoglycemic, anti-hyperlipidemic potential. Aloe barbadensis Mill. or Aloe vera is reported as one such herb. This study was to evaluate the lipid correcting effect of Aloe vera gel (AVG) in a PCOS rat model. **Materials and Methods** PCOS was induced in Charles Foster female rats by oral administration of non-steroidal aromatase inhibitor letrozole (0.5 mg/kg body weight, 21 days). All rats were hyperglycemic and 90% rats also showed elevated plasma triglycerides, elevated LDL cholesterol levels, and lowered plasma HDL cholesterol levels indicative of a dyslipidemic profile. PCOS positive rats with an aberrant lipid profile were selected for treatment. An AVG formulation (1 ml (10 mg)/day, 30 days) was administered orally. **Results and Conclusion** AVG treated PCOS rats exhibited significant reduction in plasma triglyceride and LDL cholesterol levels, with an increase in HDL cholesterol. The gel treatment also caused reversion of abnormal estrous cyclicity, glucose intolerance, and lipid metabolizing enzyme activities, bringing them to normal. In conclusion, AVG has phyto components with anti-hyperlipidemic effects and it has shown efficacy in management of not only PCOS but also the associated metabolic complication : dyslipidemia.

KEYWORDS

Aloe vera gel . anovulation . anti-hyperlipidemic effect . dyslipidemia . hyperandrogenism . infertility . insulin resistance . letrozole . polycystic ovarian syndrome

REFERENCES