

Effects of *Moringa oleifera* on insulin levels and folliculogenesis in polycystic ovary syndrome model with insulin resistance

Type: Article

Abstract:

Background: Insulin resistance is a frequent metabolic disorder in Polycystic Ovary Syndrome (PCOS). *Moringa oleifera* has been shown to increase insulin expression and decrease the degree of insulin in diabetes mellitus, therefore it is expected that *Moringa oleifera* could decrease insulin levels and increase folliculogenesis in PCOS. **Objective:** To prove the effect of *Moringa oleifera* leaf extract in various doses might decrease the insulin levels and increase folliculogenesis in female PCOS-insulin resistant rats. **Methods:** The three month old white rat of Wistar strain (*Rattus norvegicus*) 100-130 grams were divided into five groups (n=8) including normal control, PCOS-insulin resistance, PCOS-insulin resistance given metformin and PCOS-resistance insulin were given *Moringa oleifera* leaf extract in two doses. Then, the PCOS model-insulin resistance by injection of testosterone propionate for 28 days. After 14 days treatment, we analysed insulin levels and folliculogenesis. **Results:** The PCOS control group showed a significant increase in insulin levels compared to the normal control group. The insulin levels from group treatment with *Moringa oleifera* leaf extract of 250 mg/kgBW was significantly lower than the PCOS control group. Ovarian histology analysis found that the number and diameter of follicle of PCOS control group showed a significant decrease compared to normal control group. In addition, the treatment with metformin and leaf *Moringa oleifera* dose 250 mg/kgBW and 500 mg/kgBW showed significant increase of folliculogenesis compared to PCOS control group. **Conclusions:** *Moringa oleifera* could lowering the blood insulin levels, subsequently decreasing the androgen thus allowed the increasing of folliculogenesis in PCOS.

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