

Abstract

Polycystic ovary syndrome is an endocrine disorder in young women and cause the metabolic complications that lead to infertility. The present study was designed to check the effect of probiotics on histopathology of PCOS induced mice ovaries, serum lipid profile and hormones level. Vaginal smear was observed in PCOS induced mice to confirm pathogenicity. The estrus cycle was irregular due to elongation of metestrus and diestrus phase. The PCOS induced ovaries contained fluid filled cyst and degenerated follicles. The granulosa cells layer and antral was reduced and oocytes were destroyed in polycystic ovary as compared to negative control group. Estradiol valerate increased the level of VLDL, TC, and TG but decreased the level of HDL in positive control group. The serum level of FSH was decreased but the LH and testosterone level was increased in PCOS induced group as compared to negative control group. Low and high doses of *Lactobacillus reuteri* and *Clostridium butyricum* increased the granulosa cells, antral and oocytes compared to positive control group. *Lactobacillus reuteri* supplement *Clostridium butyricum* also dissolved the cyst and increased granulosa cells, antral and oocytes. Low and high doses of *Lactobacillus reuteri* and *Clostridium butyricum* increased the level of VLDL, TG and HDL but decreased the level of TC as compared to positive control group. *Lactobacillus reuteri* supplement *Clostridium butyricum* decreased the serum level of VLDL, TC, and TG but increased HDL that is a good lipid. *Lactobacillus reuteri* supplement *Clostridium butyricum* also increased the level of serum FSH but decreased the level LH and testosterone and brought the mice to their normal fertility state.