

Profortil prevents some of the leptin-induced adverse effects on sperm in *Sprague-Dawley* rats

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Serum levels of leptin, an adipocyte derived hormone, correlate positively with the amount of adipose tissue in the body. Excessive levels of leptin can have a detrimental effect on the male reproductive system and could be involved in obesity-associated infertility in the male. Exogenous leptin administration to rats has been shown to have adverse effects on sperm count and morphology; possibly involving the PI3K pathway and increased oxidative stress. This study therefore, investigated the effects of Profortil, a drug used in the treatment of male infertility, on leptin-induced effects on sperm parameters in rats. Four groups of adult *Sprague-Dawley* rats were administered once daily with either normal saline, or leptin (60 µg/kg/day, *i.p.*), or Profortil (50 mg/kg/day), or leptin and Profortil together. Leptin and Profortil were given for 2 and 3 weeks respectively. At the end of the treatment, total sperm count, fraction of sperm with abnormal morphology, serum testosterone, CYP17a1, CYP19a1, 17βHSD, 8-OHdG and total antioxidant capacity (TAC) were determined. Sperm count was significantly lower but the fraction of sperm with abnormal morphology and 8-OHdG concentration were significantly higher in leptin-treated rats. Profortil seem to have prevented the leptin-induced decrease in sperm count. It also prevented leptin-induced increase in 8-OHdG. Fraction of sperm with abnormal morphology in leptin+Profortil-treated rats was slightly lower than that in leptin only treated rats. No significant differences were seen in the concentrations of testosterone, CYP17a1, CYP19a1, 17βHSD and TAC between the four groups. In conclusion, it appears that Profortil at a dose of 50 mg/kg/day, reduces oxidative stress, as indicated by lower levels of 8-OHdG, and prevents some of the leptin-induced adverse effects on sperm. Clearly, its role in preventing leptin-induced adverse effects in sperm requires further investigations.