Association of leptin levels with body mass index and weight change in DMPA (Depot Medroxyprogesterone-Acetate) acceptors

Hasmiyanti, Sriwijaya, St. Nur Asni, Monika Fitria Farid, Anggrainy Dwifitriana Kouwagam

Department of Obstetrics and Gynecology, Faculty of Medicine, Hasanuddin University, Makassar, Indonesia

ABSTRACT

Introduction: Hormonal contraceptive DMPA (Depot Medroxyprogesterone-Acetate) has several side effects, one of which is weight gain. Leptin and its receptors have been identified as the main regulators of body weight. This study aims to analyse the relationship between leptin levels and Body Mass Index (BMI) and weight change in DMPA acceptors. **Objective:** To examine the association of leptin levels with body mass index and weight change in DMPA (Depot Medroxyprogesterone-Acetate) acceptors. **Materials and Methods:** This study is an analytical observational study with a Prospective Cohort design. The sample consisted of 61 adolescent DMPA injection KB acceptors at the Health Centre in Makassar. Statistical analysis used Kolmogorov-Smirnov and Wilcoxon test. **Results:** DMPA users (from the 6th to the 12th month) experienced an increase in BMI (obesity). Statistical analysis showed a significant relationship between the duration of DMPA use and BMI ($P < 0.001$). Serum leptin levels increased after DMPA use from the 6th to the 12th month. Statistical analysis showed a significant relationship between the duration of DMPA use and leptin levels ($p < 0.001$). A significant relationship was observed between BMI, weight change and leptin levels at the 12th month of DMPA use ($p < 0.001$), but not at the 6th month ($p > 0.05$). **Conclusion:** The use of DMPA at the 12th month resulted in an increase in leptin levels, weight change and Body Mass Index (obesity).