Hemoinflammasome Potential of Oral Contraceptive Pills in Women at Child-Bearing Age

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ABSTRACT

Background and Objectives: Oral contraceptive pills are widely used for family planning worldwide. However, their effects on physiological processes including inflammation and iron homeostasis are not fully elucidated. The present study aimed to comprehensively evaluate the impact of oral contraceptives on serum ferritin as an indicator of iron stores, and C-reactive protein as a marker of inflammation, in women of reproductive age.

Methods: The study enrolled 100 women aged 21-45 years, comprising 50 oral contraceptive users and 50 non-users. Demographic and clinical data were gathered through questionnaires. Blood samples were collected for measurement of ferritin and C-reactive protein levels.

Results: The findings revealed significantly elevated serum ferritin and C-reactive protein in oral contraceptive users compared to non-users. Moreover, increasing body weight was positively correlated with higher ferritin and C-reactive protein concentrations among contraceptive users. Menstrual irregularities and increased abortion rates were also observed in oral contraceptive users relative to non-users.

Conclusion: The results highlight that long-term use of oral contraceptives may perturb iron homeostasis and provoke low-grade chronic inflammation in women of childbearing age. Additionally, overweight oral contraceptive users represent a particularly high-risk group warranting close monitoring of iron and inflammation markers. Further research into the intricate biomolecular mechanisms and downstream health impacts of altered ferritin and C-reactive protein levels with oral contraceptive use is recommended.

Keywords: C-reactive protein, Ferritin, Inflammation, Iron, Oral contraceptives, Reproductive age women.

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