

EDITORIAL

Oral Contraception: Beyond What Meets the Eye. Sorry, the Ovaries!

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Editorial referring to the article: Effects of Physical Exercise on Lipid and Inflammatory Profile of Women Using Combined Oral Contraceptive: A Cross-Over Study

The concept of oral contraception, historically, was supposed to enable control of unwanted pregnancies and facilitate family planning for women of reproductive age in an elegant fashion for everyone needing it. However, the influence of different prescriptions on women's health during active use, as well as later on in life – *beyond the quintessential fear of thromboses lay women worldwide have* – has not been studied extensively or meticulously, despite the widespread use. Also, with some countries recently starting to embrace the over-the-counter concept for oral contraceptives in addition to the mechanical ones, a mandatory visit to a physician to get a personalized prescription will become a growing phenomenon and its public health consequences are unforeseeable, evidently.

In the current issue of *IJCS*, we had the pleasure of reading a paper by Gomes *et al.*¹ who presented their original article with results of a cross-over study of the influence of high-intensity interval training (HIIT) on the lipid and inflammatory profile of women using combined oral contraceptives (COC) that showed a beneficial effect to the latter, but not the former.

For the purpose of this Editorial, the Authors conducted an extensive systematic review of the currently available evidence hoping to identify gaps in the current knowledge globally.

Besides, dedicated societies – such as the American College of Obstetricians and Gynecologist²⁻⁵ and the European Board and College of Obstetrics and Gynecology⁶ – an occasional comment on importance

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of contraception can be found in cardiovascular societies' guidelines or position papers offering advice on long-term management of women with heart disease, but with no particular detailed, yet comprehensive, "Dos" and "Don'ts" being currently available. Therefore, aiming to facilitate further choices for all facing one, we have tried to summarize contraindications and cautious use in Figure 1. As pictured, the two prescription options – *combined estrogen-progestin oral contraceptives in monophasic and biphasic version and progestin-only oral contraceptives* – are globally available; however, how a woman and her physician(s) choose the best one considering the indication (contraception or other) remains in the domain of personalized medicine.

The pro-inflammatory, endothelial-dysfunction promoting and pro-thrombotic effects cause a myriad of pro-atherothrombotic states that facilitate cerebrovascular and cardiovascular events accompanied by diabetes and dyslipidemia, especially in the presence of pre-existing smoking.

Pasvol *et al.*⁷ have observed an increase in the risk of inflammatory bowel disease in women using combined, instead of progestogen-only, pills in a UK cohort of patients, consistent with Quinn *et al.*⁸ that reported that women using oral contraceptives to have higher oxidative stress and CRP.

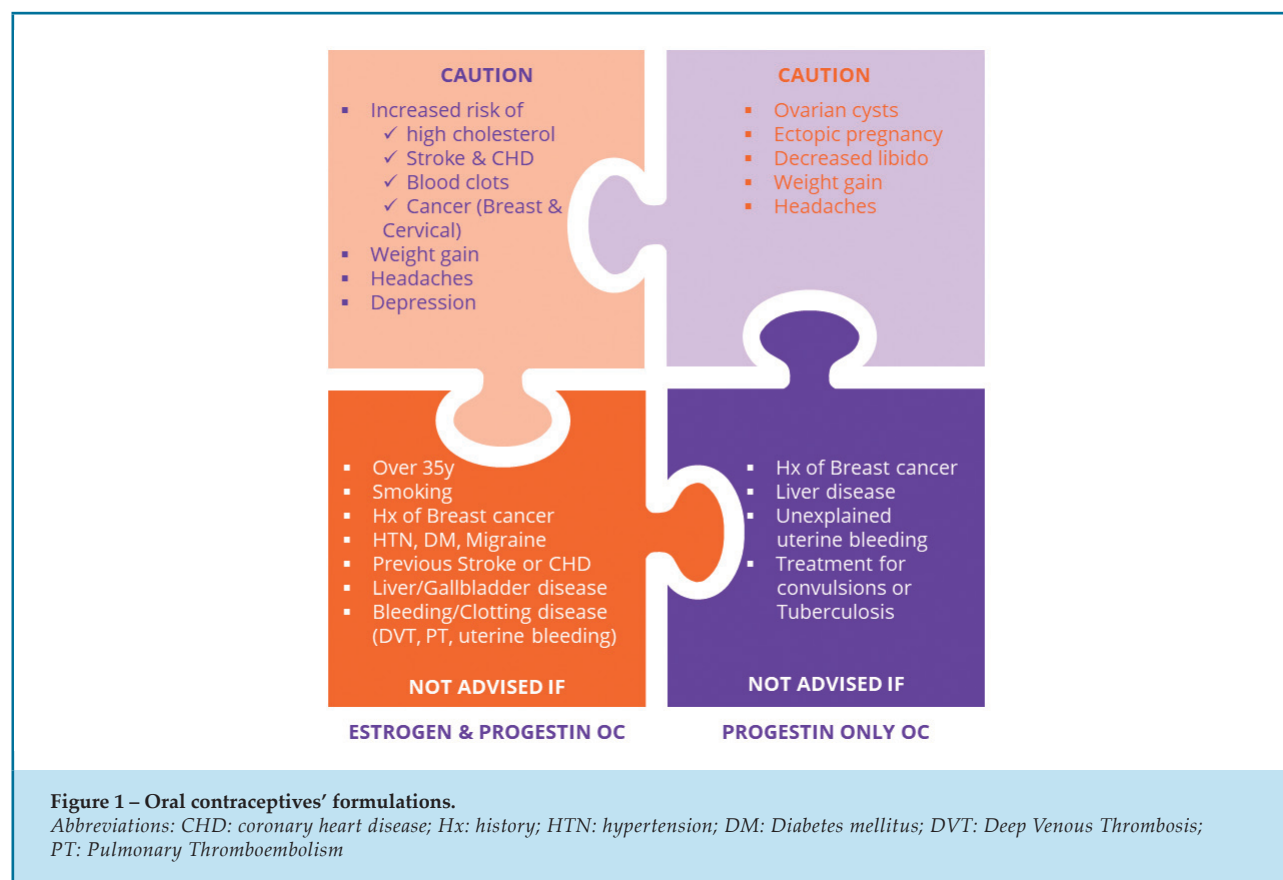
Jimoh *et al.*⁹ in the African population, have shown lipid profile alterations for COC, it is quite the opposite for progestin-only oral contraceptives in a Spanish cohort¹⁰ that left glucose, insulin, and hemostasis intact. Short-term cardiovascular risk gets aggravated with COC,⁹ however, the WISE cohort¹¹ unadjusted prior oral contraceptives' use was associated with lower longer-term all-cause and cardiovascular disease mortality, except for women with very elevated menopausal

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systolic blood pressure. Still, none of these cohorts reported the percentage of women with family hypercholesterolemia, whose issue of oral contraceptive choice remains a debate.¹²

Lamenting on the regrettable outcomes will surely not improve healthcare for women worldwide who need it despite their respective countries' economies and social determinants of health,^{13,14} yet region- and country-specific solutions¹⁵ must be implemented if we aim to improve cardiovascular and reproductive care of women on a global scale.

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