



Oral contraceptive induced hypertension: A conceptual study

M Ravaoli *

Department of Obstetrics and Gynecology, Oregon Health and Science University, Portland, USA

* Corresponding author. E-mail: Matteo@ravaoli.edu

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DESCRIPTION

Virtually all the data on serious side effects of Oral Contraceptive (OC) come from developed countries, where circulatory disease and the factors predisposing women to it are common. One of the serious side effects is hypertension which may increase the risk of stroke and coronary artery disease. The first case of hypertension related to OC containing estrogen was reported by Brownrigg followed high Owen. During this period this side effect was not considered as of clinical significance. In the very next year a study observed that blood pressure of hypertensive women dropped markedly in some instance to normal, when the OC was discontinued; two of the women challenged with other OC, again became hypertensive (Zhu, 2020). Since then OC-induced hypertension has been recognised as a clinical significance, and several investigators have confirmed the above finding that OC containing estrogen may induce or aggravate hypertension. A number of points suggest that hypertension may be a major problem in the use of this type of contraceptive -unless appropriate measures are taken to curtail its development (Hoffmann M, 2018). Initial research suggested that the estrogenic component of the OC was responsible for the elevation in blood pressure while a report from the Royal College of Study implicated the progestin component as well. The rates of first diagnosis of hypertension in the group rose with the amount of progestin in their pill. Previous study reported that progesterone causes fall in blood pressure and natriuretic in female patients suffering from essential hypertension. Similarly, in a hypertensive model of dog, such antihypertensive effect was observed. In contrast, some studies reported that progesterone administration in normal rabbit produced elevation of blood pressure; however, this finding was not confirmed in the other study. Even though the natural progesterone has varied effect on blood pressure, the synthetic progesterone used in OC has a sodium retaining effect which may contribute to OC-induced hypertension. Still the issue remains

unresolved regarding the role of the two components of the pill and regarding the duration of OC use and incidences of hypertension (Chen, 2020). Recently the role of estrogen in the development of OC-induced hypertension has been suggested. To what extent OC-induced hypertension contributes to excess mortality and whether lower pressure after discontinuation of OC remains lower and so contributes to reduced mortality later are also still controversial.

From the available evidences it seems quite certain that OC, conjugated estrogen and diethylstilbesterol induced hypertension in some patients but the exact incidences of hypertension caused by OC use range from just a few percent upto 18% or more. By conservative standard it now appears fairly reasonable to state that about 5 percent of women using OC develop overt hypertension (Fehr, 2015). The consequences are said to run the gamut of hypertensive phenomena from mild manifestations resembling essential hypertension to the occurrence of stroke and even renal failure. In contrast to most other major studies i.e., the Oxford/FPA cohort study detected no significant difference in hypertension rates amongst its three groups of participants using OC, diaphragm and intrauterine device. The large scale studies conducted at Kaiser-Permanente Medical Centre and at the Royal College of General Practitioners suggested that development of hypertension is related to the duration of medication; indeed the California study reported systolic pressure rise in all women after 3 years of OC use (Gao, 2020). The Boston area mail survey of the early 1970s also detected an apparent increase in the hospitalization rate for hypertension that was correlated with length of OC use. It is found that both the systolic and diastolic levels were higher in OC users at all ages from 15 to 60 years in comparison with nonusers. Hypertension was diagnosed in 6 percent of current users versus 2.4% of those not on OC. New cases of hypertension occurred six times more frequently in users than in nonusers in one 3-year study Crane reported that

36 of 325 consecutive/female who had been receiving OC developed hypertension (BP 160 systolic and/or 100 diastolic) and the blood pressure of 18 of these returned to normal after the medication was discontinued.

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