

The oral contraceptive medications consistently produce very large increases in plasma renin substrate concentration. Less consistent increases in plasma renin and urinary aldosterone were found. These changes can lead to an increased formation of angiotensin in the blood. Angiotensin is the most powerful substance known in its capacity to raise the blood pressure by constricting blood vessels. In certain susceptible individuals these induced hormonal changes with secondarily induced changes in sodium and water metabolism can operate to compromise the buffer capacity of the renin-angiotensin-aldosterone system which normally functions to regulate blood pressure and the salt and water content of the body.

When the buffer capacity of this hormone system is so deformed hypertension may be produced by very exaggerated (pressor) responses to circulating renin as it is released by various physiologic stimuli.

These observations may be relevant to the use of female hormones in other clinical situations. For example: a higher incidence of strokes has been reported in males receiving female hormones for treatment of prostatic cancer. They may also be applicable to the understanding of other forms of high blood pressure, particularly the hypertension which can occur spontaneously during pregnancy and seriously complicate its course.

In an individual patient, the determination of whether these powerful hormones should be used depends on a consideration of this and other known risk factors as balanced against the alternate risks inherent in pregnancy, and also the consequent hazards of overpopulation.

Since pill hypertension has been shown to be reversible, the hazards of serious high blood pressure during therapy can be avoided by regular checkups with appropriately oriented medical personnel. Education of these personnel and of the public is probably the most important factor for control of this undesirable side effect due to the pill.