

group but was unchanged in the gestodene group, whereas apolipoprotein A₁ increased in the gestodene group but not in the levonorgestrel group. Antithrombin III decreased in the gestodene group but was unchanged in levonorgestrel-treated women. Factor VII increased in both groups but more in the gestodene group. We conclude that gestodene has a positive influence on lipid metabolism, probably because of its lower androgenicity, and a slightly negative influence on coagulation. The latter, however, probably has no clinical relevance.

Effects of ethinyl estradiol combined with desogestrel and cyproterone acetate on glucose tolerance and insulin response to an oral glucose load: A one-year randomized, prospective, comparative trial

Jandrain BJ, Humblet DMP, Jaminet CB, Scheen AJ, Gaspard UJ, Lefebvre PJ

Division of Diabetes, CHU Sart Tilman, B-4000 Liege 1, BEL
AM J OBSTET GYNECOL 1990, 163/1 II SUPPL (378—381)

To investigate the effects of two slightly estrogen-dominant, monophasic, low-dose oral contraceptives on carbohydrate metabolism, 40 healthy young women were randomly allocated to receive either 30 µg of ethinyl estradiol + 150 µg of desogestrel, a 19-nortestosterone-derived progestin (Marvelon, n = 21) or 35 µg of ethinyl estradiol + 2 mg of cyproterone acetate, a 17-acetoxypregnosterone derivative (Diane-35, n = 19) for a prospective observation period of 1 year. At baseline, 6, and 12 months, blood glucose, plasma insulin, and plasma C-peptide levels were measured during an oral glucose tolerance test. Although the changes were absent (Marvelon) or minimal (Diane-35) at 6 months, both groups had a slight increase in blood glucose levels at 12 months, overall glucose tolerance remaining, however, within the normal range. Plasma insulin levels remained unchanged in the Diane-35 group, which suggested increased insulin resistance, but were significantly decreased in the Marvelon group despite significant rises in plasma C-peptide levels. Comparison of plasma C-peptide and insulin changes suggests enhanced pancreatic insulin secretion and increased hepatic insulin metabolism with both Marvelon and Diane-35.

Time-dependent alterations in lipid metabolism during treatment with low-dose oral contraceptives

Kuhl H, Marz W, Jung-Hoffmann C, Heidt F, Gross W
Division of Gynecological Endocrinology, Department of Obstetrics and Gynecology, JW Goethe University, Theodor-Stern-Kai 7, D-6000 Frankfurt am Main 70, DEU

AM J OBSTET GYNECOL 1990, 163/1 II SUPPL (363—369)

The effect of sex steroids on lipid metabolism depends on the type and dose of the compounds, the route of administration, and the duration of treatment. Therefore the composition of an oral contraceptive determines the resultant effect on lipids and lipoproteins. During 12 months of treatment, the effects of two oral contraceptives containing 30 µg of ethinyl estradiol and 150 µg of desogestrel (EE/DG) or 75 µg of gestodene (EE/GSD) on 19 serum parameters of lipid metabolism were followed in 11 women each. There was no change in total cholesterol and phospholipids. Total triglyceride levels were significantly elevated only by EE/GSD. After 3 and 6 months of intake of both prepara-

tions, a transitory increase in the triglyceride content of very low-density lipoprotein and low-density lipoprotein and a decrease in low-density lipoprotein-phospholipids was observed. After 12 months, very low-density lipoprotein cholesterol, very low-density lipoprotein phospholipids, and apolipoprotein B were significantly elevated, whereas very low-density lipoprotein triglycerides and all components of low-density lipoprotein were unchanged. Most of the components of high-density lipoprotein (HDL) were increased as a result of a rise in HDL₃ and apolipoprotein A₂, whereas HDL₂ and apolipoprotein A₁ were not altered. There was no significant difference between the effects of the two preparations, although those of EE/GSD were mostly more pronounced. The increase in high-density lipoprotein, very low-density lipoprotein, and total triglycerides reflects a slight preponderance of the effect of the estrogen component. Because low-density lipoprotein cholesterol and total cholesterol were not changed, treatment with both formulations is in all probability not associated with an elevated risk of atherosclerosis.

Clinical aspects of the relationship between oral contraceptives, abnormalities in carbohydrate metabolism, and the development of cardiovascular disease

Gaspard UJ, Lefebvre PJ

Service de Gynecologie, CHU Sart Tilman B 35, B-4000 Liege 1, BEL

AM J OBSTET GYNECOL 1990, 163/1 II SUPPL (334—343)

Although large epidemiologic studies indicated no difference in the frequency of diabetes mellitus in nonusers and everusers of high-dose combination oral contraceptives, other studies had shown an increased risk of impaired glucose tolerance in current users, which is estimated to be roughly twice as frequent as that in nonusers. Women at risk of developing impaired glucose tolerance while receiving high-dose oral contraceptives either had previous gestational diabetes mellitus or were older, obese, or had a positive family history of diabetes mellitus. The tendency to decreased glucose tolerance seems essentially related to the dosage and chemical structure of the progestogen used in oral contraceptives, namely, estrane and particularly gonane progestins. However, increased frequency of impaired glucose tolerance and potentially diabetes mellitus are obviously not linked to the use of the more potent gonane progestins. The use of low-dose oral contraceptives, particularly with reduced progestogen content (such as in the triphasic formulations and last-generation monophasic preparations), is accompanied by a low risk of impaired glucose tolerance, even in previous gestational diabetes mellitus. The mechanism of decreased glucose tolerance in oral contraceptive users is unknown but seems related partially to increased peripheral resistance that is potentially caused by a postreceptor defect in insulin action. Changes in insulin production or metabolic clearance rate are not excluded by recent, sophisticated investigations of carbohydrate metabolism in oral contraceptive users. Impaired glucose tolerance and diabetes mellitus, chronic hyperglycemia, and hyperinsulinemia are believed to increase atherogenic risk either by their direct action or their effects on lipid metabolism. Newer epidemiologic studies now indicate that the incidence of cardiovascular disease in low-dose, low-risk, current oral contraceptive users has been substan-