Circulating lipid and lipoprotein concentrations with oral estrogen-androgen hormone replacement therapy

DAVID D. YOUNGS, MD; BYRON J. HOOGWERF, MD; LESLIE R. SCHOVER, PhD; RUTH K. CANNATA, RN

■ The goal of this study was to determine whether the administration of an oral combined estrogen-androgen preparation would influence the lipid and lipoprotein profile of postmenopausal women. There were no pretreatment to posttreatment differences in triglycerides, total cholesterol, or in low density lipoproteins and very low density lipoproteins. However, high density lipoprotein values decreased significantly after treatment. Although further study is warranted, these preliminary findings suggest that the potential beneficial effects of oral estrogen-androgen on sexual and psychological well-being may need to be weighed against the possible cardiovascular risks of adverse lipid changes in postmenopausal women.

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CONTROVERSY PERSISTS over the role of androgen in maintaining sexual function in menopausal women.[1–3] Although some clinical reports favor testosterone therapy for enhancing diminished sexual desire in these women,[4,5] little has been published concerning the efficacy or side effects of the various commercially available androgenic steroid preparations.[6–8]

Recent interest in estrogen-androgen replacement therapy has been stimulated by the work of Sherwin,[2] who demonstrated a significant increase in sexual arousal, desire, and sexual fantasies when injectable estrogen-androgen was compared with injectable estrogen in surgically menopausal women.[4] In the United States, the oral preparations of estrogen-androgen and conjugated estrogen appear to be preferred by women over the injectable forms.

Further trials are needed to determine the effects of these agents on sexual parameters. However, given the increasing cardiovascular mortality following the menopause, it seems prudent to first determine if these agents are associated with potential adverse effects on serum lipids and lipoproteins.[9] We report here a preliminary study of the lipid effects of oral estrogen-androgen therapy in both surgically and naturally menopausal women.

METHODS

Our study sample comprised 29 consecutive postmenopausal women (mean age 47) who expressed low sexual desire or a specific interest in estrogen-androgen hormone replacement. Of the 29 women in our sample, 25 women had undergone a previous total

From the Departments of Gynecology (D.D.Y., R.K.C.), Endocrinology (B.J.H.), and Psychology (L.R.S.), The Cleveland Clinic Foundation.

Address reprint requests to D.D.Y., Department of Gynecology, A81, The Cleveland Clinic Foundation, 9500 Euclid Avenue, Cleveland, OH 44195.

TABLE
MEAN DIFFERENCES (± SD) IN LIPID VALUES
BEFORE AND AFTER HORMONE REPLACEMENT THERAPY IN 29 PATIENTS

	Pretreatment	Posttreatment	*P* value	N1 range
Total cholesterol	195 ± 39	194 ± 36	not significant	100 to 199 mg/dL
HDL cholesterol	55 ± 7	48 ± 13	<.002	>55 mg/dL
TC/HDL cholesterol	3.84 ± 1.3	4.30 ± 1.34	<.002	4.44 mg/dL (average)

abdominal hysterectomy and bilateral salpingo-oophorectomy, and 4 had experienced natural menopause. Each patient received a thorough pretreatment assessment, and current indications and contraindications for estrogen therapy served as guidelines. Serum total cholesterol (TC) and high-density lipoprotein cholesterol (HDL-C) values were determined before and after treatment. The treatment regimen was a once-daily dosage of Estratest HS (0.625 mg of esterified estrogens with 1.25 mg of methyltestosterone), given for a minimum of 6 weeks.

Although patients were aware that lipid values were being drawn, no specific dietary advice was provided, and there were no reported changes in body weight during the period of study.

RESULTS

TC, HDL-C, and TC/HDL-C and LDL-C/HDL-C ratios were calculated, and Wilcoxon signed-ranks statistical analysis of all pretreatment and posttreatment values were carried out. No significant differences in TC or LDL-C/HDL-C were found. However, we did note statistically significant differences in HDL-C and TC/HDL-C, which may be of clinical importance (*Table*).

DISCUSSION

The changes found in HDL-C and TC/HDL-C are similar in magnitude to those seen with low-dose oral contraceptive use in premenopausal women[10]; however, effects of hormone therapy on women of reproductive age vs menopausal women may not be otherwise comparable.

Although further study is warranted, these preliminary findings suggest that the potential beneficial effects of oral estrogen-androgen on sexual and psychological well-being may need to be weighed against the possible cardiovascular risks as reflected in adverse lipid changes in postmenopausal women. In particular, women at high risk as a result of preexisting elevated TC, depressed HDL-C, or both, may not be appropriate candidates for estrogen-androgen hormone replacement therapy.

Given these preliminary results and the reservations noted, we are proceeding with a double-blind, randomized study of once-daily oral esterified estrogen (0.625 mg) and methyltestosterone (1.25 mg) to further evaluate the effects on lipoprotein levels and sexual desire and arousal in postmenopausal women.

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