

Lipid profiles in gender dysphoric adolescents treated with GnRH analogues alone and in combination with cross-sex hormones

Introduction

According to the endocrine society guidelines¹ GnRH analogues (GnRHa) are used to suppress pubertal development of the natal sex in gender dysphoric adolescents. Subsequently, cross sex hormones can be given to induce pubertal development of the experienced gender.

Limited data on the safety of this treatment are available.

In gender dysphoric male-to-female (MtF) adults estrogens have been shown to result in a decrease in total, LDL- and HDL cholesterol, whereas testosterone treatment in female-to-male (FtM) results in an increase of total and LDL-cholesterol and triglycerides, and a decrease in HDL-cholesterol.²

Objective

This study aimed to determine if GnRHa and cross sex hormone treatment of gender dysphoric adolescents influences lipid levels.

Conclusions

In gender dysphoric adolescents puberty suppression during 2 years gave an increase of total and HDL-cholesterol. Estrogen treatment in MtF led to a decrease in LDL-cholesterol levels, while testosterone treatment in FtM led to a decrease in HDL-cholesterol levels. The implications of these changes for future health in gender dysphoric adolescents remain unclear. Gender dysphoric individuals treated according to the adolescent protocol should be closely monitored throughout adulthood.

Experimental Setup

During GnRHa and cross sex hormone treatment fasting blood samples were drawn yearly to monitor lipid levels (total cholesterol, LDL- and HDL-cholesterol and triglycerides).

Subjects

Fifty-one MtF and 67 FtM gender dysphoric adolescents were included at start of GnRHa treatment and 34 MtF and 39 FtM at start of cross sex hormone treatment.

Results

During two years of GnRHa treatment a significant increase in total cholesterol ($p=0.013$) and HDL-cholesterol ($p=0.017$) was found in both sexes. LDL-cholesterol and triglycerides did not significantly change during these two years. (figure 1)

During two years of cross sex hormone treatment a significant decrease in HDL-cholesterol ($p=0.001$) was found in FtM, while in the MtF a significant decrease in LDL-cholesterol ($p=0.008$) was found. The other lipid levels did not change significantly over time. (figure 2)

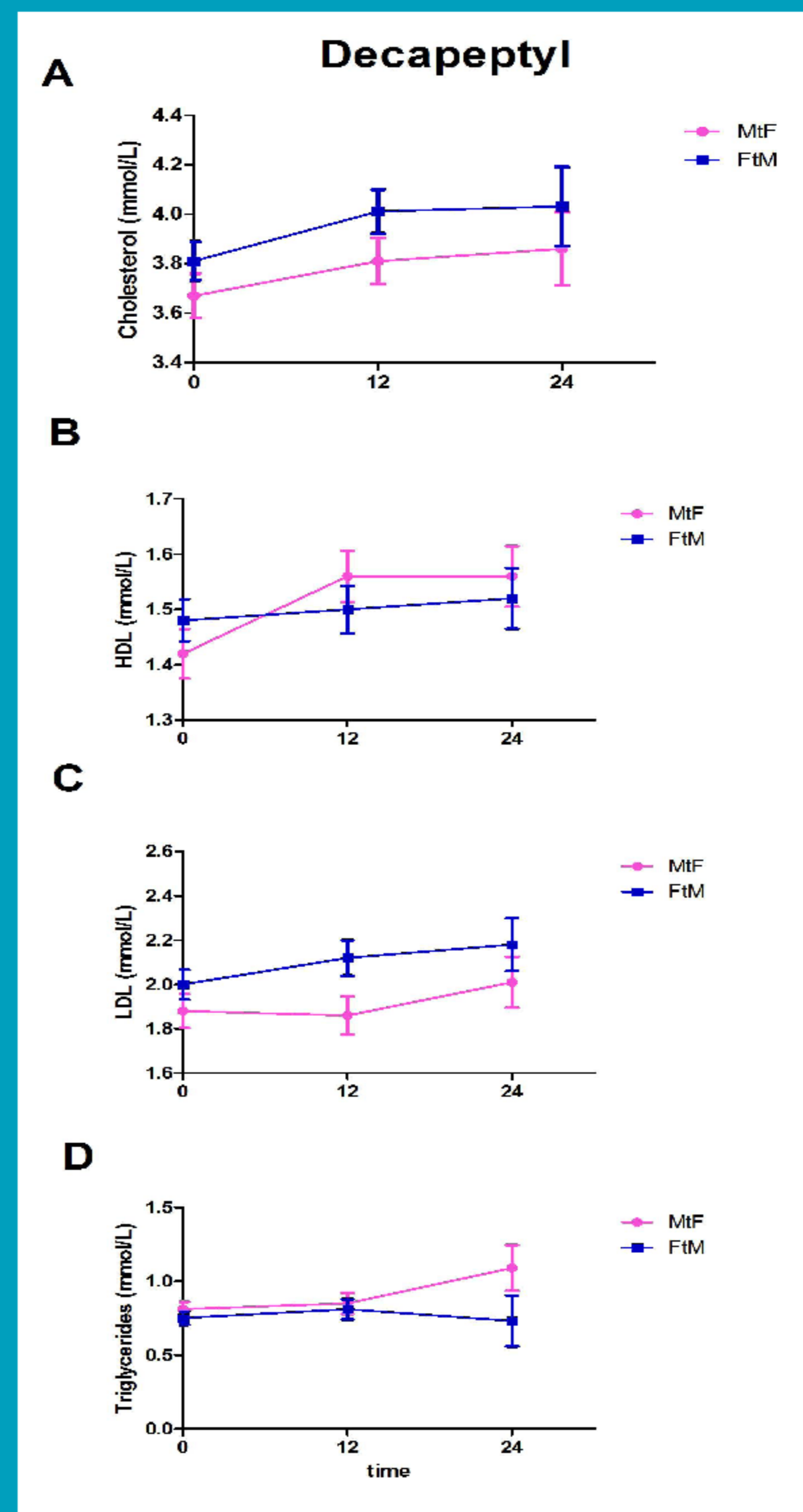


Figure 1: Changes in lipid levels during 24 months of GnRHa treatment. A: total cholesterol; B: HDL-cholesterol; C: LDL-cholesterol; D: triglycerides. A significant increase in total and HDL-cholesterol was found in both sexes. MtF: male-to-female; FtM: female-to-male

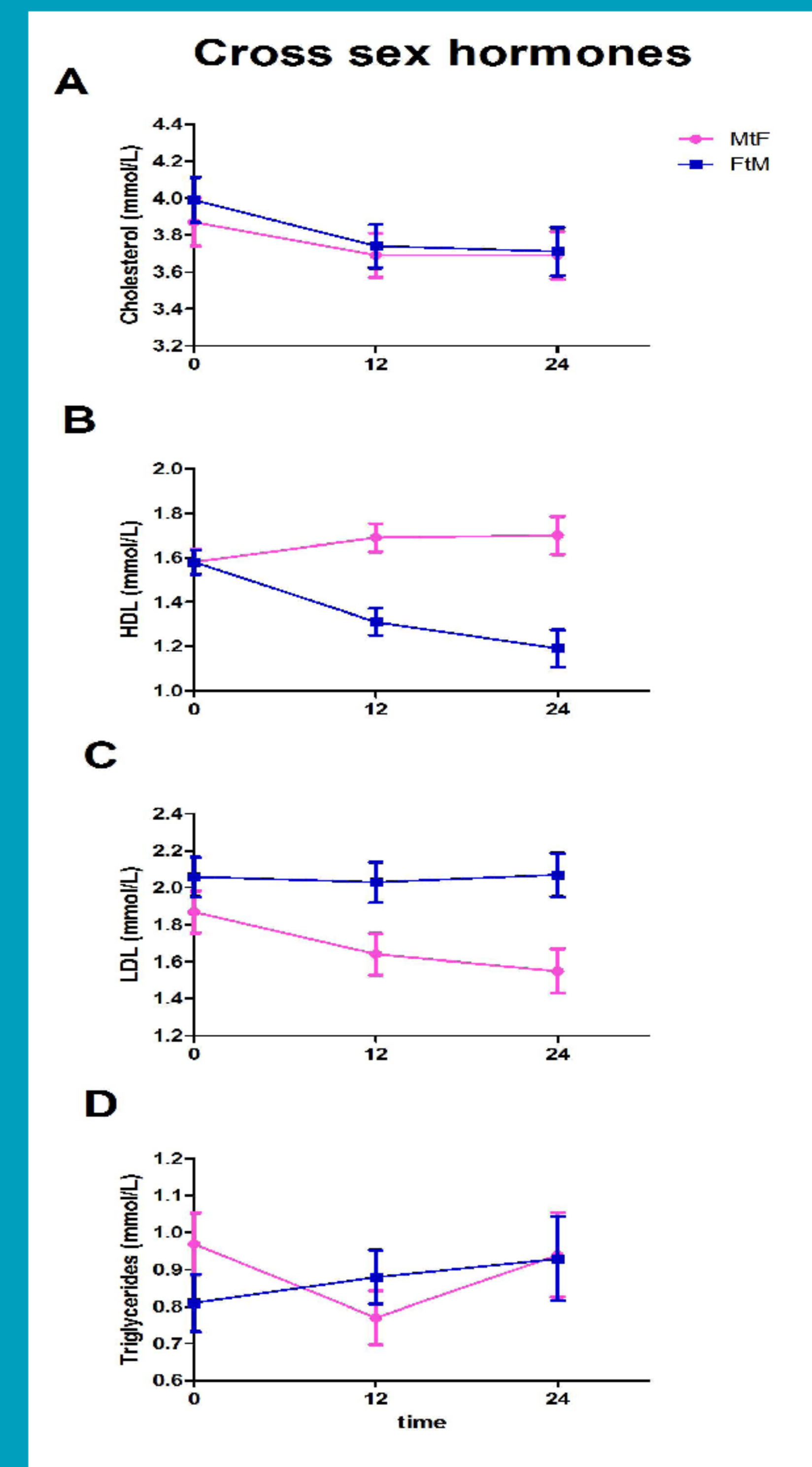


Figure 2: Changes in lipid levels during 24 months of cross sex hormone treatment. A: total cholesterol; B: HDL-cholesterol; C: LDL-cholesterol; D: triglycerides. A significant decrease in HDL-cholesterol in MtF and significant increase in LDL-cholesterol in FtM was found. MtF: male-to-female; FtM: female-to-male

References

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