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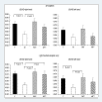

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Short communication

Typical female 2nd–4th finger length (2D:4D) ratios in male-to-female transsexuals—possible implications for prenatal androgen exposure

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Abstract

Prenatal exposure to androgens has been implicated in transsexualism but the etiology of the condition remains unclear. The ratio of the 2nd to the 4th (2D:4D) digit lengths has been suggested to be negatively correlated to prenatal androgen exposure. We wanted to assess differences in 2D:4D ratio between transsexuals and controls.

Sixty-three male-to-female transsexuals (MFT), 43 female-to-male transsexuals (FMT), and 65 female and 58 male controls were included in the study. Photocopies of the palms and digits of the hands were taken of all subjects and 2D:4D ratios were measured, according to standard published procedures.

Comparison between right-handed individuals revealed that the right-hand 2D:4D in MFT is higher than in control males but similar to that observed in control females. In FMT we found no differences in 2D:4D relative to control females. Our findings support a biological etiology of male-to-female transsexualism, implicating decreased prenatal androgen exposure in MFT. We have found no indication of a role of prenatal hormone exposure in female-to-male transsexualism.

Keywords

Transsexualism; Gender identity; 2D:4D ratio; Development; Testosterone; Hormones

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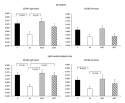

Figure 1. 2D:4D ratios in females (F), males (M), female-to-male (FMT) and male-to-female transsexuals (MFT). Columns indicate means, error bars show the SEM. To test for group differences, the two-tailed Student's *t*-test was used. After Bonferroni adjustment the differences (right hands) between MFT and M, FMT and M, and F and M remained significant in right-handed subjects ($p<0.05$).

Figure options

Table 1. Subject characteristics.

F, non-transsexual females; M, non-transsexual males; FMT, female-to-male transsexuals; MFT, male-to-female transsexuals. Age in years is given as means with SD in brackets.

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