

Effects and Side Effects of Cyproterone Acetate alone and in combination with estrogens in male to female transgender adolescents

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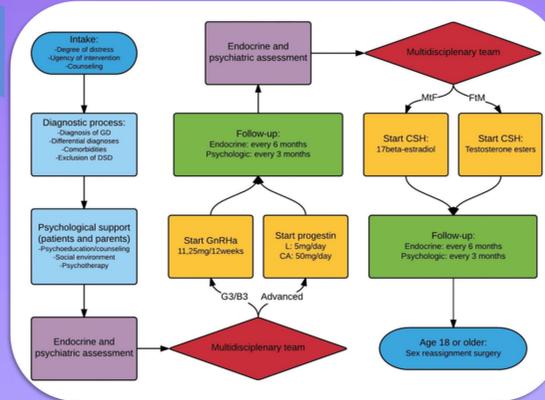
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Background

Worldwide the amount of people presenting with *distress* because their birth sex is incongruent with the gender they experience or express is increasing. Presentation of **gender dysphoria** during childhood and adolescence is also increasing, whereas to date, treatment options for this age group remain limited.

When diagnosed early in puberty, gonadotropin releasing hormone analogues (*GnRHa*) are generally offered for full suppression of gonadotropins and secondary sexual characteristics from puberty onwards.

When the diagnosis is made during mid- or late puberty, anti-androgenic *progestins* can be offered in transgirls to weaken the effects of endogenous hormones, e.g. suppress virilisation, libido,...



Flowchart of **care plan** for GD at Ghent University Hospital

GnRHa are *expensive and can not reverse pubertal development*. Therefore anti-androgenic progestins may be a valuable alternative when GnRHa are not reimbursed.

However, *no studies* exist on the eventual anti-androgenic effects and side effects of this treatment.

Aim and Methods

Aim: To examine the effects of Cyproterone Acetate in monotherapy (CA) and in combination with Estrogens (CA+E) on *antropometry, safety parameters and hormone levels* in male to female late pubertal transgender adolescents.

Methods: Retrospective analysis of clinical and biochemical data in 27 male to female transgender adolescents, treated with CA and CA+E at the gender clinic of *Ghent University Hospital*. In all cases, treatment was started at Tanner stage 4 or later.

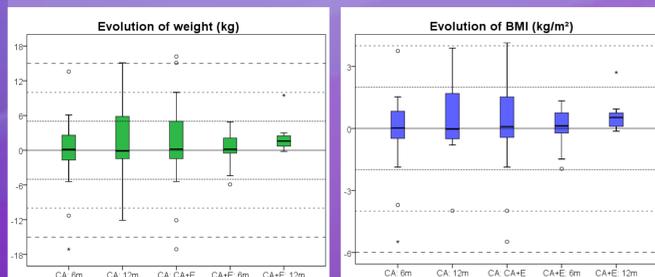
Disclosure: The authors report no conflicts of interest.

Results

Mean treatment duration:
CA: 11 months; CA+E: 12 months

Antropometrics

Height start CA: 174.6 cm,
Height start CA+E: 175.6 cm



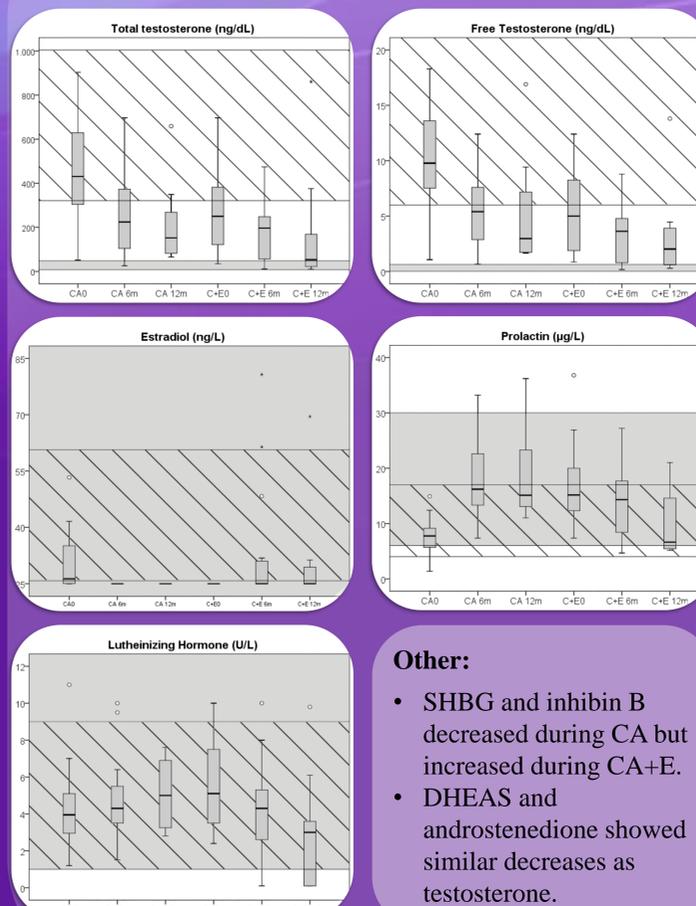
Side effects

Side effect	CA	CA+E
Breast tenderness	2/25 (8%)	8/17 (47,1%)
Emotionality	2/25 (8%)	4/17 (23,5%)
Hunger	0/25 (0%)	4/17 (23,5%)
Fatigue	8/25 (32%)	2/17 (11,8%)
Flushes	1/25 (4%)	2/17 (11,8%)

Effects

Effect	CA	CA+E
Decreased shaving need	14/25 (56,0%)	10/17 (58,8%)
Breast development	B2: 3/25 (12,0%) B3: 4/25 (16,0)	B3: 13/17 (76,5%) B4: 1/17 (5,9%)

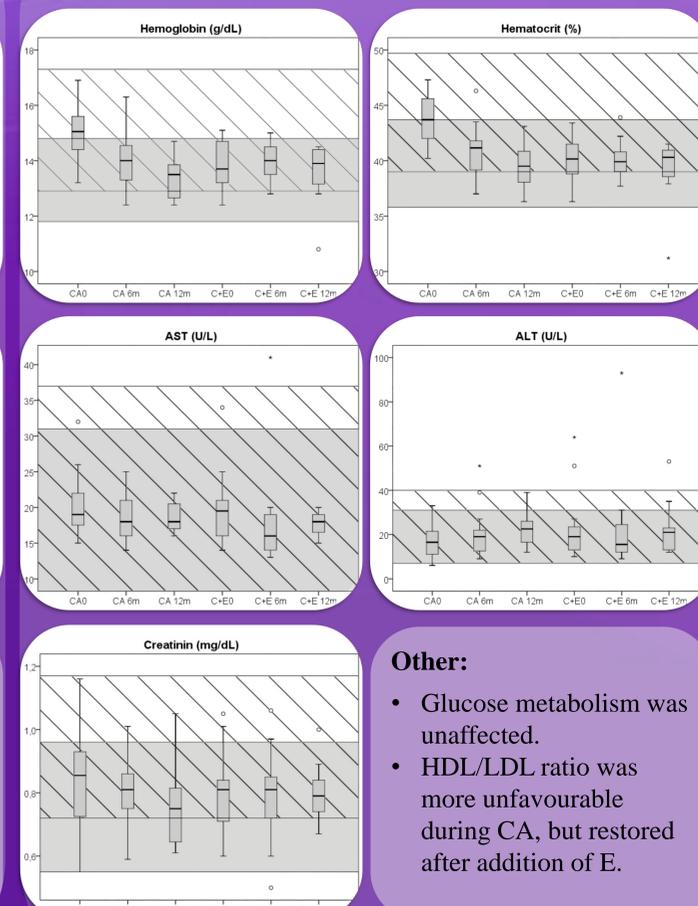
Hormones



Other:

- SHBG and inhibin B decreased during CA but increased during CA+E.
- DHEAS and androstenedione showed similar decreases as testosterone.

Biochemical



Other:

- Glucose metabolism was unaffected.
- HDL/LDL ratio was more unfavourable during CA, but restored after addition of E.

Conclusions

CA seems to be *safe and effective* in reducing effects of endogenous sex steroids. Compared to GnRHa, androgen levels and gonadotropins are *not fully suppressed*. Therefore, CA can most likely not prevent the development of secondary sexual characteristics during early puberty. However, *limited breast development* was noticed in some adolescents, indicating *bodily changes* towards the desired sex. Overall, CA seems specifically indicated in trans girls with already *advanced pubertal development*, especially in a setting where GnRHa are not reimbursed and while awaiting eligibility for CSH treatment.

