56-P1 Immunohistochemical detection of estrogen α and androgen receptors in genital tissues in girls with congenital adrenal hyperplasia

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The authors declare that there are no conflicts of interests associated with this manuscript

OBJECTIVES

Introital stenosis in CAH girls could occur due to poor estrogenization of vaginal tissue. It is unknown whether CAH genital skin is equally capable of responding to estrogens and androgens, depending on form and degree of external virilization.

Objective:

To determine the levels of estrogen α (ERa) and androgen receptors (AR) immunoreactivity in genital tissues of girls with CAH.

METHODS

Surgical waste tissues obtained from girls with CAH (Prader III-IV) undergoing clitoroplasty (n=13; 2,4 years (2,1; 4,0), SW/SV= 11/2) and vaginoplasty (n=8; 16,7 years (15,2; 17,6), SW/SV = 3/5) were screened for ERα and AR using immunohistochemistry. All patients received adequate replacement therapy. Proportions of immunopositive nuclei were calculated for each specimen.

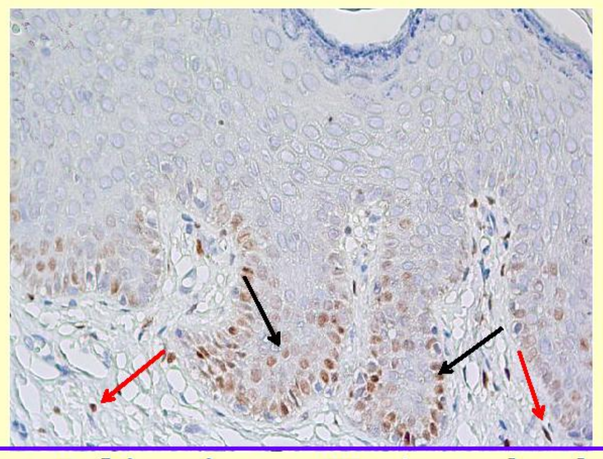
RESULTS

In clitorophallic tissue (labia minora) ERα were localized in parabasal and basal epidermal cells and in dermal fibroblasts (Pic. 1), whereas AR were observed only in parabasal cells (Pic. 2). There was no difference between SW and SV forms in ERα levels (16,8% vs 15%) and in AR level (9,7% vs 15,2%), p>0,05. No difference was observed in ERα and AR expression between patients with Prader III and IV (15,4% vs 20,8% for ERα and 15,6% vs 10,4% for AR), p>0,05 (Tabl. 1).

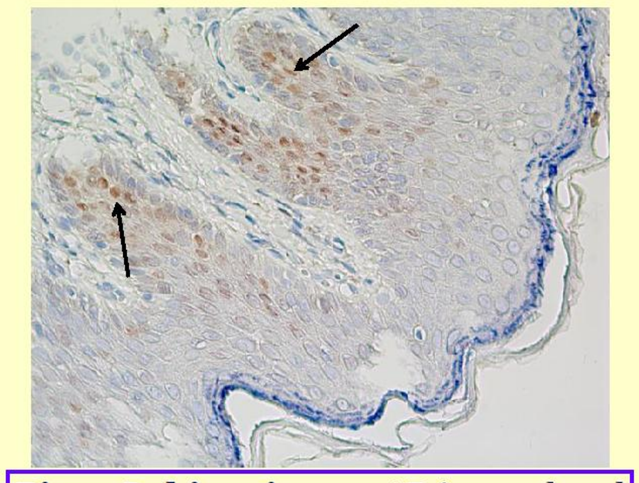
In vagina ERα were localized in basal, parabasal and intermediate epithelial cells and in stromal fibroblasts (Pic. 3). AR were observed only in basal epithelial cells (Pic. 4). There was no difference between SW and SV forms in ERα levels (55,8% vs 46,6%) and in AR levels (5,4% vs 7,9%), p>0,05. No difference was found in ERα and AR expression between patients with Prader III and IV (54,1% vs 43,9% for ERα and 9,2% vs 3,9% for AR), p>0,05 (Tabl. 1).

Table 1. The ratio of estrogen α and androgen receptors in genital tissue in girls with CAH

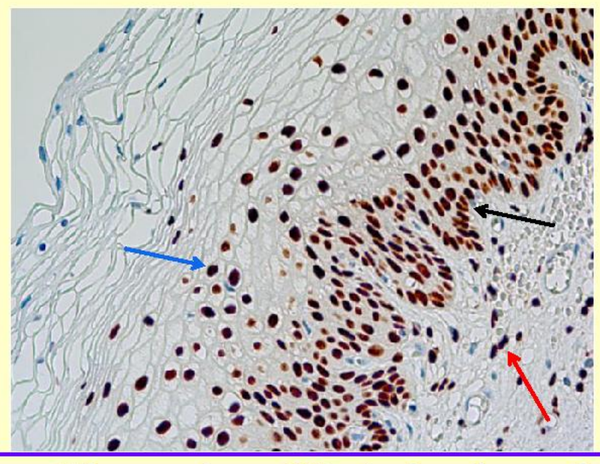
Clitorophallic tissue (labia minora)			
	SW	**SV**	***p***
ERα	16,8% (12,7; 27,3)	14,97% (11,1; 18,8)	>0,05
AR	9,7% (5,4; 19,1)	15,2% (12,7; 17,6)	>0,05
	Prader III	**Prader IV**	***p***
ERα	15,4% (12; 18,3)	20,8% (14,7; 25,0)	>0,05
AR	15,6% (7,08; 20,9)	10,4% (6,04; 11,9)	>0,05
Vaginal tissue			
	SW	**SV**	**p**
ERα	55,8% (42,5; 61,6)	46,6% (41,2; 52,4)	>0,05
AR	5,4% (2,5; 44,2)	7,9% (4,7; 13,08)	>0,05
	Prader III	**Prader IV**	**p**
ERα	54,1% (43,9; 58,7%)	43,9% (41,2; 46,6)	>0,05
AR	9,2% (5,05; 28,6)	3,95% (0; 7,9)	>0,05



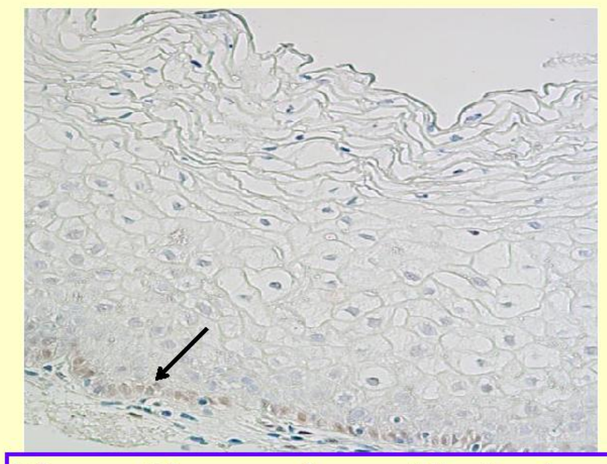
Pic.1. Labia minora: ERα in parabasal and basal epidermal cells (black arrows) and in dermal fibroblasts (red arrows)



Pic.2. Labia minora: AR in parabasal epidermal cells (black arrows)



Pic.3. The vagina: ERα in basal, parabasal (black arrow) and intermediate epithelial cells (blue arrow) and in stromal fibroblasts (red arrow)



Pic.4. The vagina: AR in basal epithelial cells (black arrow)

CONCLUSIONS

The distribution of ERα and AR in genital tissues in girls with CAH is similar to its distribution in healthy adult women. Expression of these receptors doesn't depend on form of CAH and degree of external virilization.

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