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CORTICOSURRENE:

IPERPLASIA SURRENALE CONGENITA

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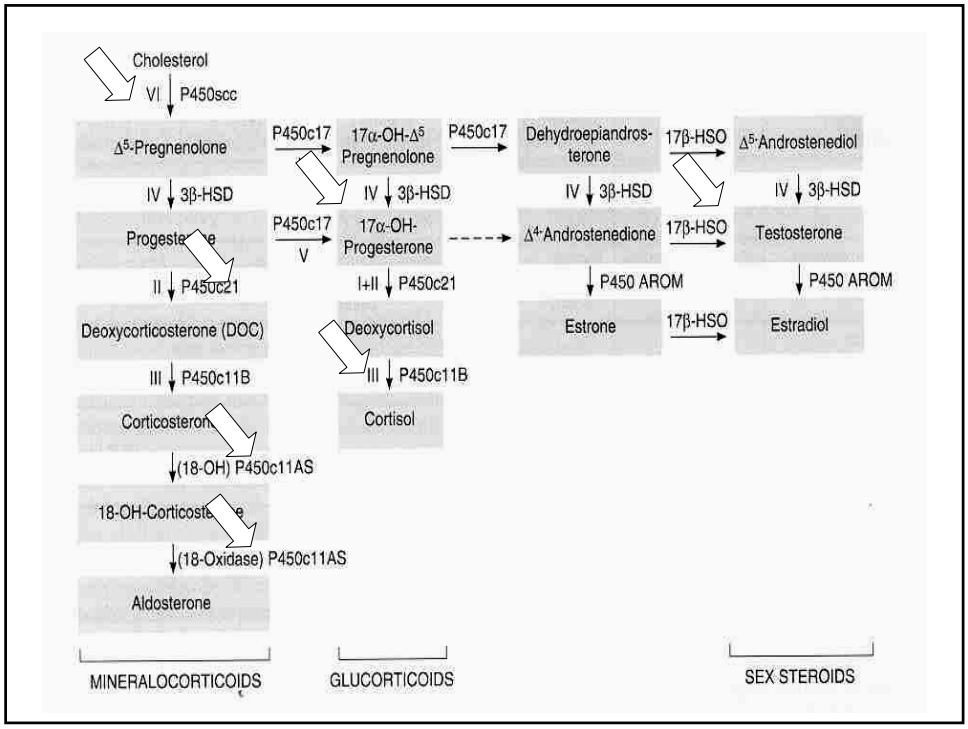
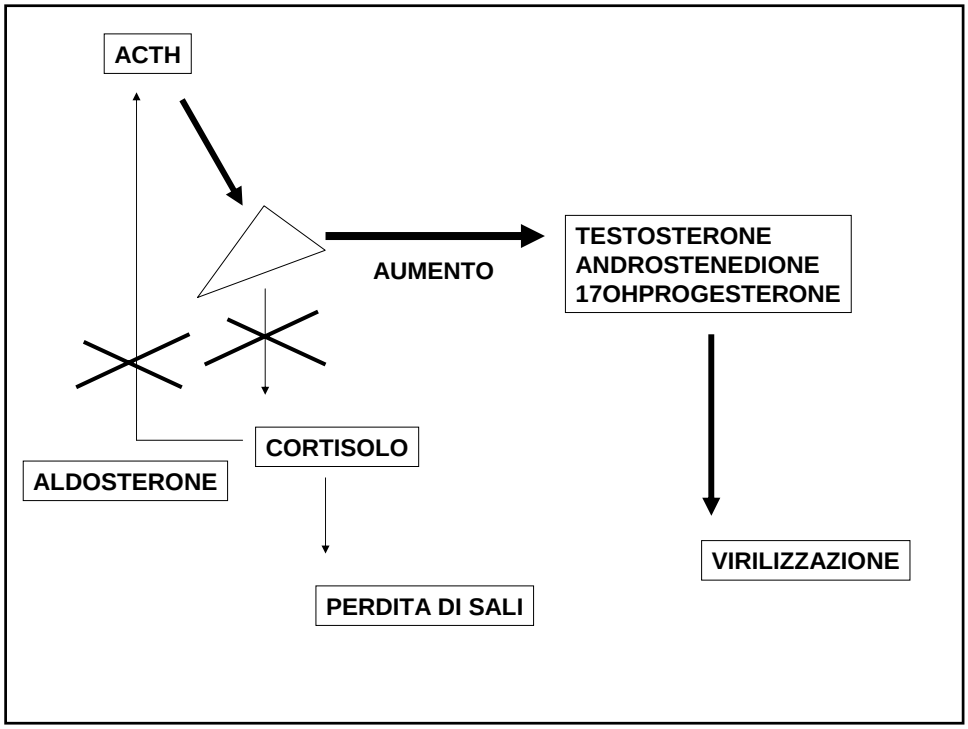
Iperplasia surrenale congenita

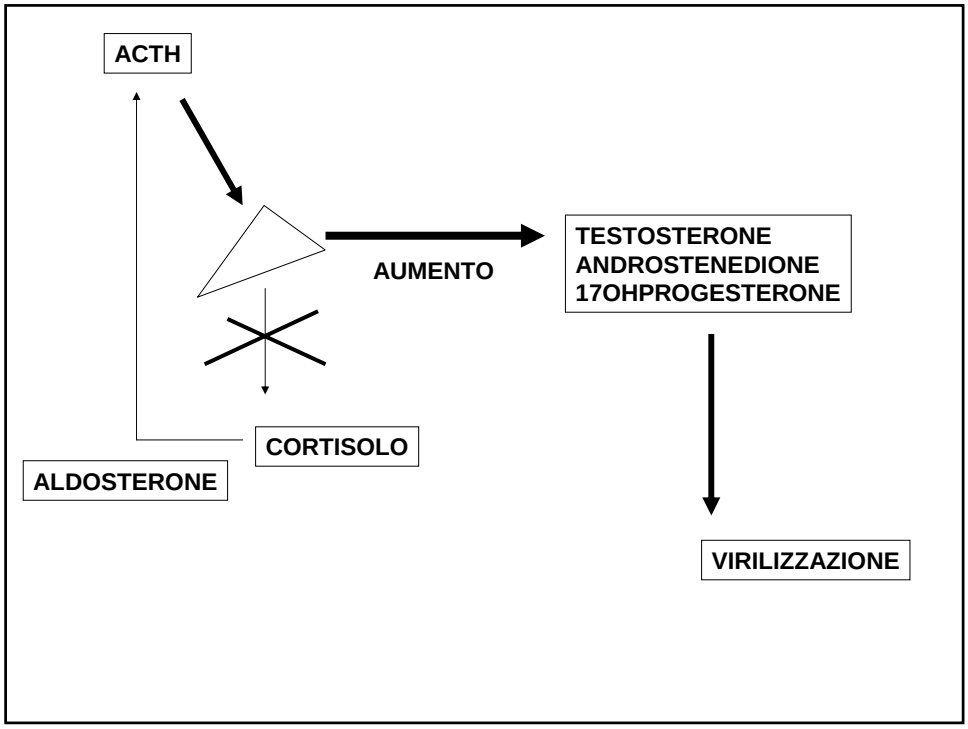
Deficit della biosintesi steroidea surrenalica da alterazione enzimatica congenita

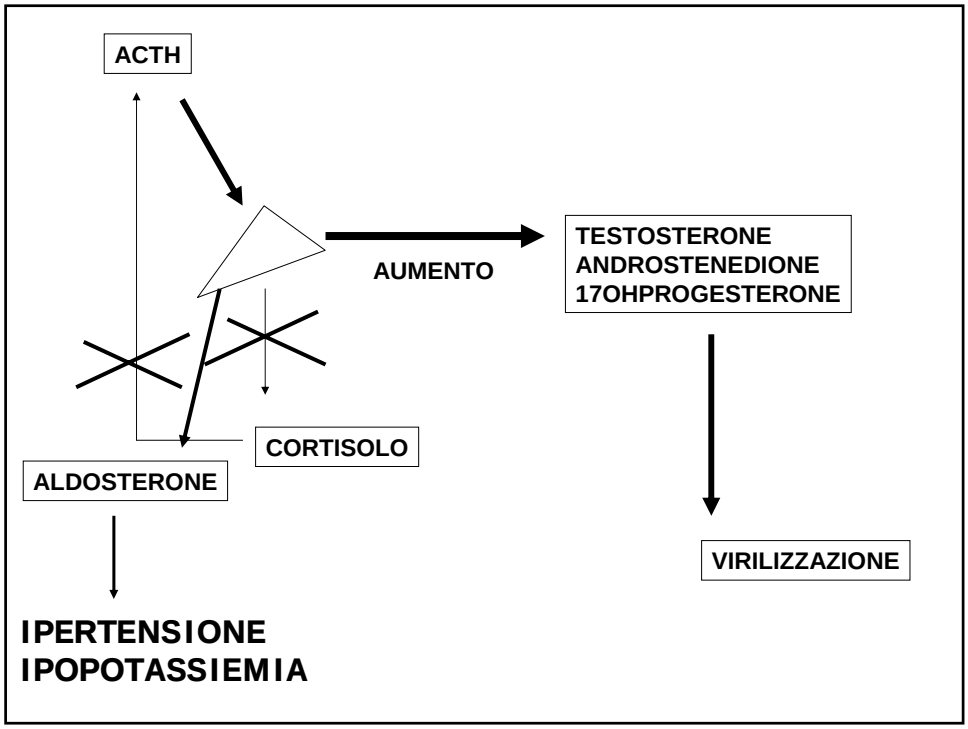
Deficit di secrezione del cortisolo
Aumento dell'ACTH

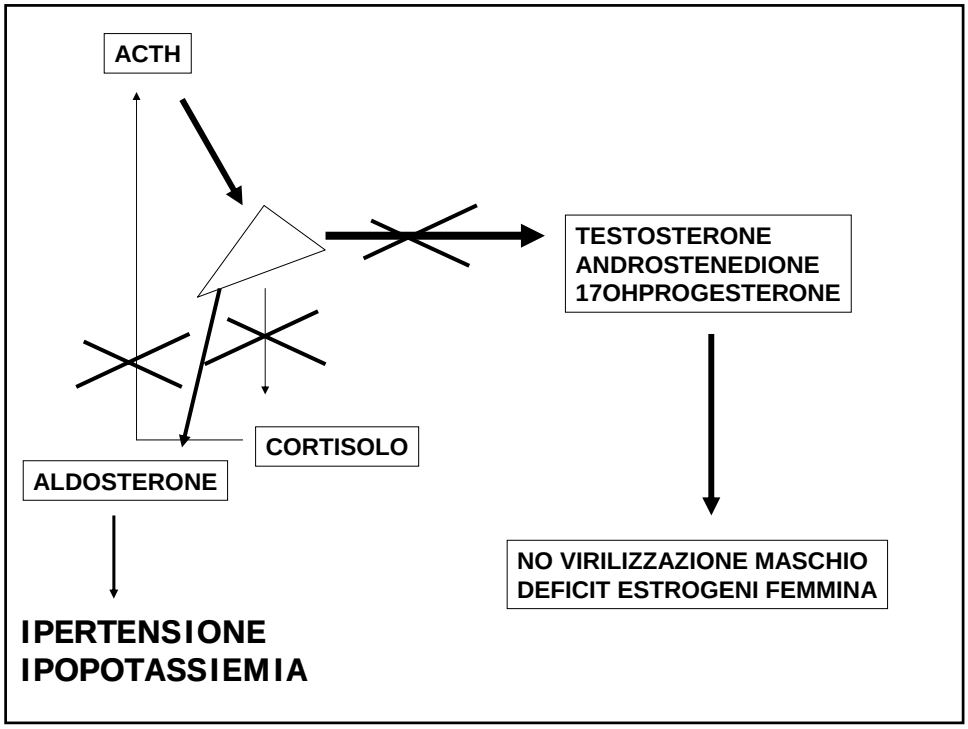
Aumento di metaboliti intermedi:
Androstenedione
DHEA
17OHPROG, PREGNEN, Cortisosterone
11desossicortisolo

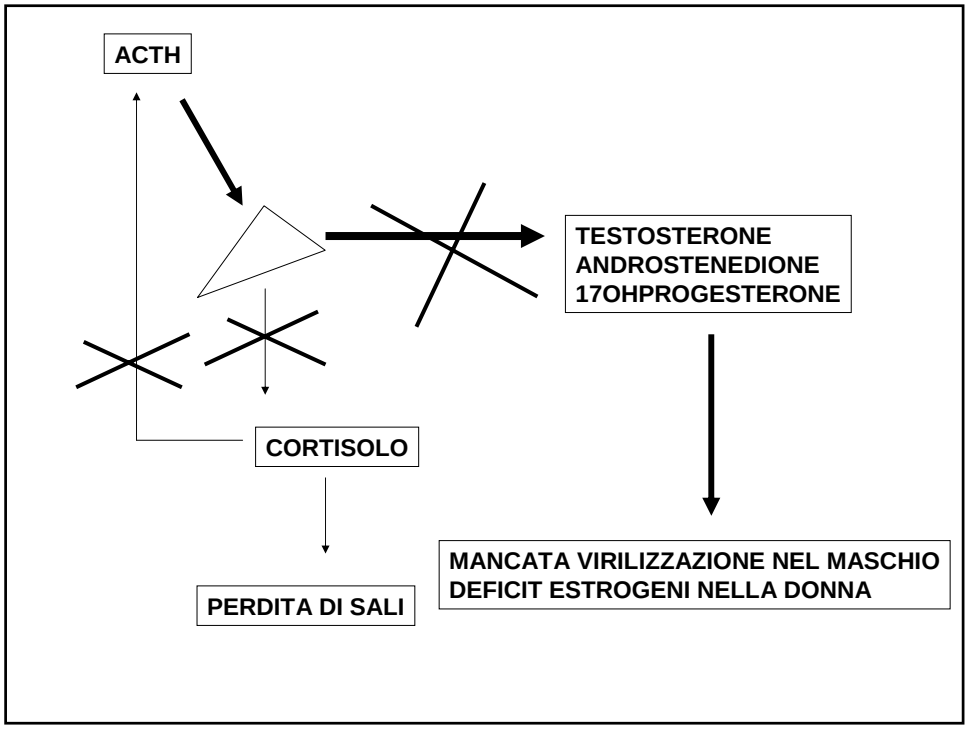












ISC

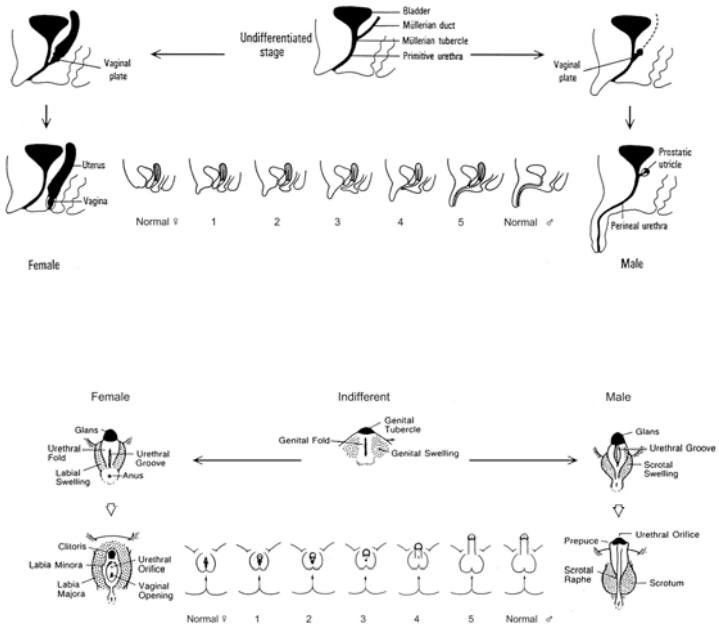
1. IPOSURRENALISMO GLOBALE
2. DEFICIT GLUCO-MINERALCORTICOIDI, AUMENTO ANDROGENI
3. DEFICIT GLUCO, AUMENTO ANDROGENI
4. D EFICIT GLUCO, AUMENTO MINERALCORTICOIDI ED ANDROGENI

ISC CONSEGUENZE CLINICHE

- EPOCA
- ENTITA' DEL DEFICIT
- SEDE DEL BLOCCO STEROIDOGENETICO
- SESSO

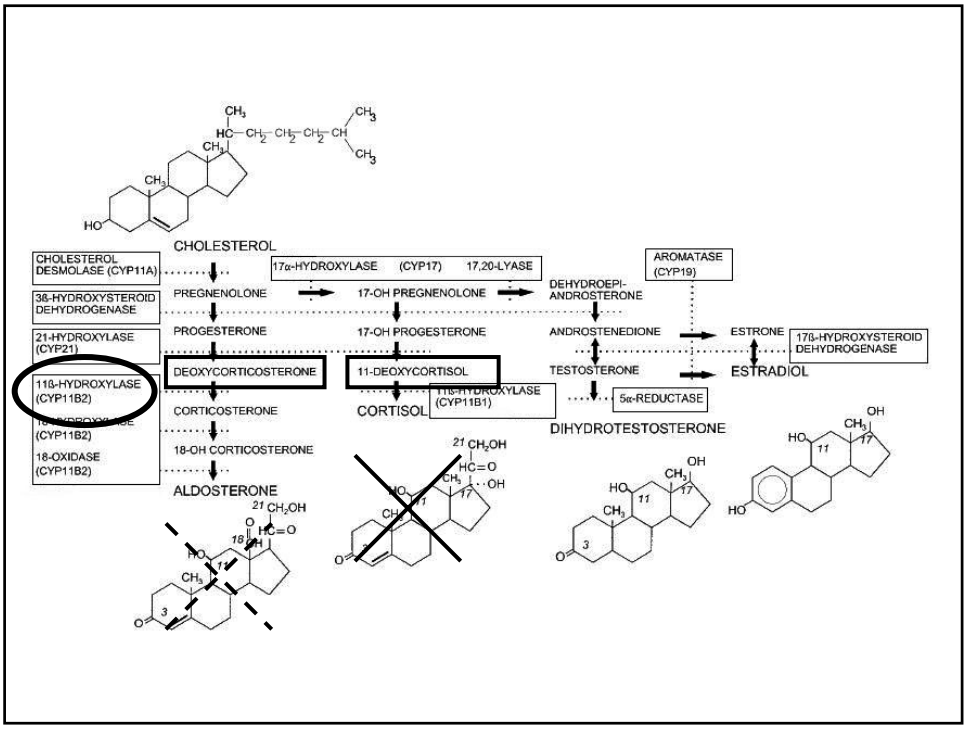
ISC

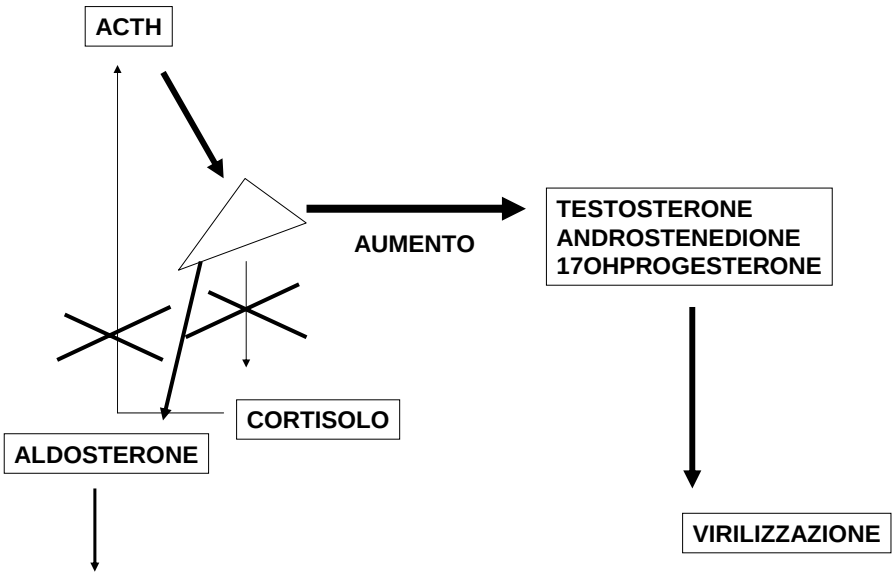
- EPOCA EMBRIOFETALE
- EPOCA PREPUBERALE
- ADULTO



Disease	21-Hydroxylase deficiency	11β-Hydroxylase deficiency	Aldosterone synthase deficiency	17α-Hydroxylase deficiency	3β-Hydroxysteroid dehydrogenase deficiency	Lipoid hyperplasia
Defective gene	*CYP21*	*CYP11B1*	*CYP11B2*	*CYP17*	*HSD3B2*	*STAR*
Alias	P450c21	P450c11	P450aldo	P450c17	3β-HSD	
Chromosomal location	6p21.3	8q24.3	8q24.3	10q24.3	1p13.1	8p11.2
Ambiguous genitalia	+ in ♀	+ in ♀	No	+ in ♂ No puberty in ♀	+ in ♂ Mild in ♀	+ in ♂ No puberty in ♀
Addisonian crisis	+	Rare	Salt wasting only	No	+	++
Incidence (gen. pop.)	1:10–18,000	1:100,000	Rare	Rare	Rare	Rare
Hormones						
Glucocorticoids	↓	↓	Normal	Corticosterone normal	↓	↓
Mineralocorticoids	↓	↑	↓	↑	↓	↓
Androgens	↑	↑	Normal	↓	↓ in ♂ ↑ in ♀	↓
Estrogens	Relatively ↓ in ♀	Relatively ↓ in ♀	Normal	↓	↓	↓
Physiology						
Blood pressure	↓	↑	↓	↑	↓	↓
Na balance	↓	↑	↓	↑	↓	↓
K balance	↑	↓	↑	↓	↑	↑
Acidosis	+	± Alkalosis	+	± Alkalosis	+	+
Elevated metabolites	17-OHP	DOC, 11-deoxycortisol	Corticosterone, ±18-hydroxy-corticosterone	DOC corticosterone,	DHEA, 17Δ⁵Preg	None
Reference		(13)	(13)	(14)	(15)	(6)

17-OHP, 17-Hydroxyprogesterone; DOC, deoxycorticosterone; DHEA, dehydroepiandrosterone; 17Δ⁵Preg, 17-Δ⁵-hydroxypregnenolone.

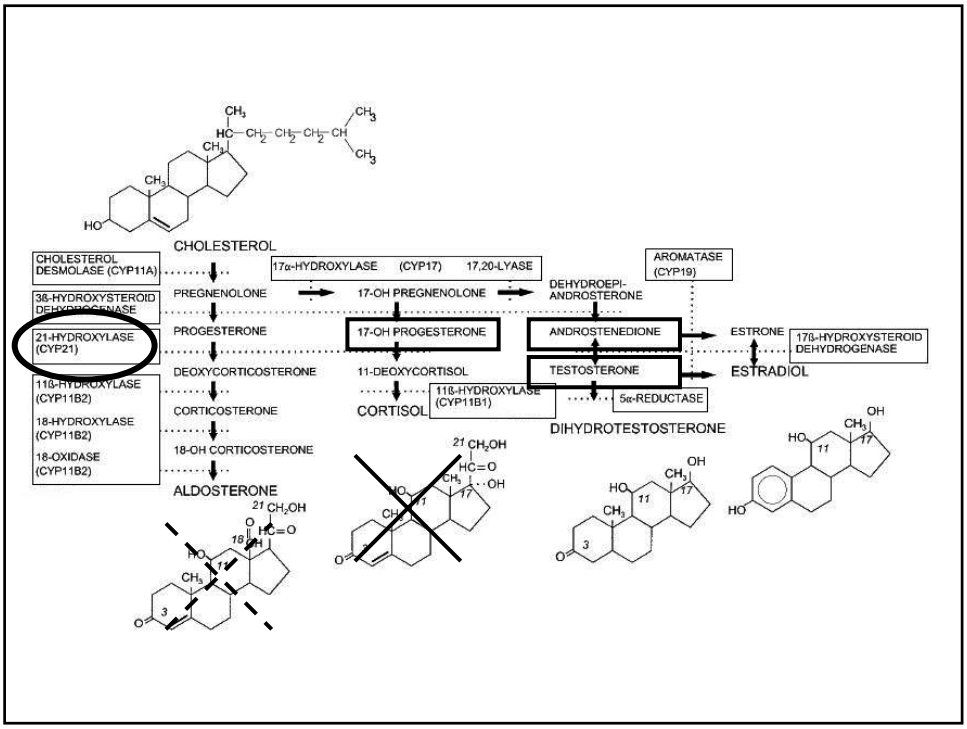


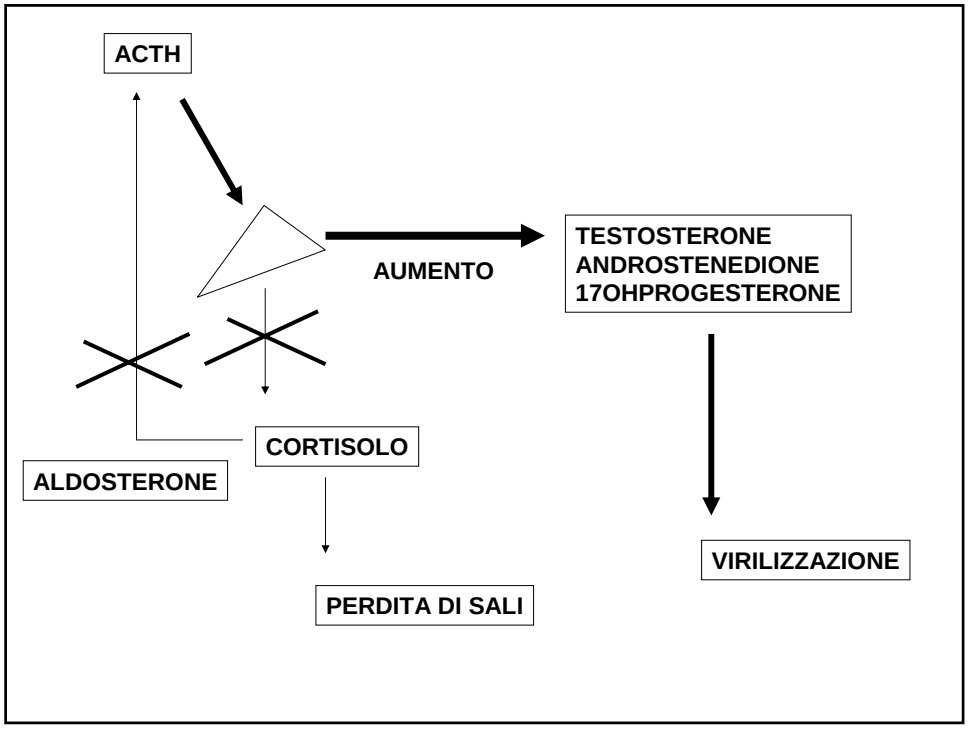


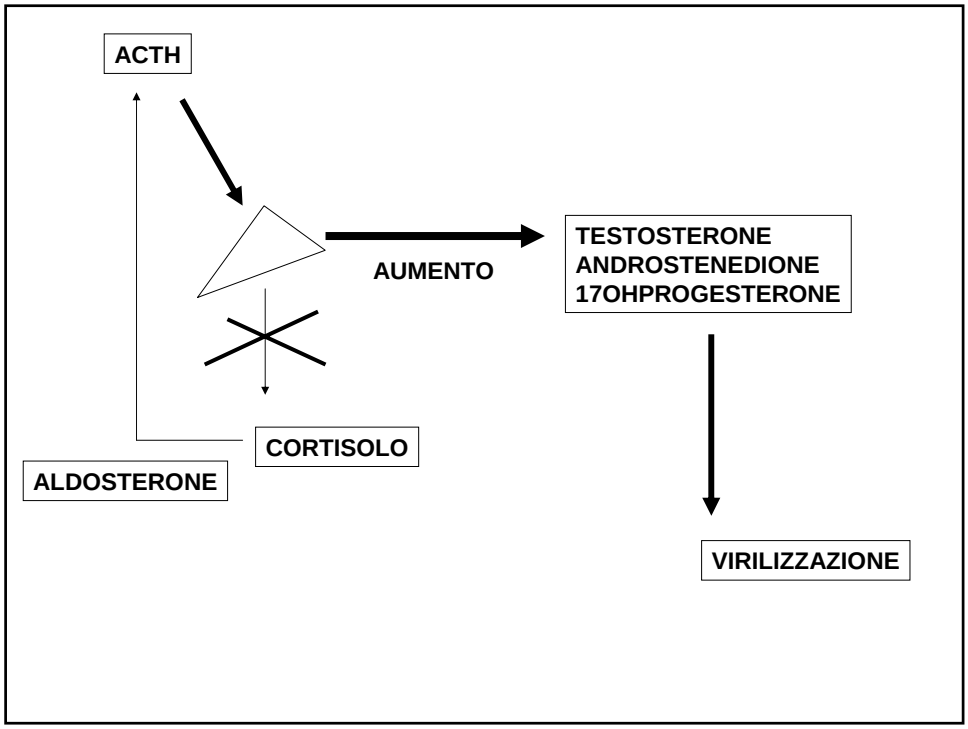
DEFICIT 11BIDROSSILASI
BASSA STATURA
ANTICIPO PUBERALE
IPERTENSIONE

Disease	21-Hydroxylase deficiency	11β-Hydroxylase deficiency	Aldosterone synthase deficiency	17α-Hydroxylase deficiency	3β-Hydroxysteroid dehydrogenase deficiency	Lipoid hyperplasia
Defective gene	*CYP21*	*CYP11B1*	*CYP11B2*	*CYP17*	*HSD3B2*	*STAR*
Alias	P450c21	P450c11	P450aldo	P450c17	3β-HSD	
Chromosomal location	6p21.3	8q24.3	8q24.3	10q24.3	1p13.1	8p11.2
Ambiguous genitalia	+ in ♀	+ in ♀	No	+ in ♂ No puberty in ♀	+ in ♂ Mild in ♀	+ in ♂ No puberty in ♀
Addisonian crisis	+	Rare	Salt wasting only	No	+	++
Incidence (gen. pop.)	1:10–18,000	1:100,000	Rare	Rare	Rare	Rare
Hormones						
Glucocorticoids	↓	↓	Normal	Corticosterone normal	↓	↓
Mineralocorticoids	↓	↑	↓	↑	↓	↓
Androgens	↑	↑	Normal	↓	↓ in ♂ ↑ in ♀	↓
Estrogens	Relatively ↓ in ♀	Relatively ↓ in ♀	Normal	↓	↓	↓
Physiology						
Blood pressure	↓	↑	↓	↑	↓	↓
Na balance	↓	↑	↓	↑	↓	↓
K balance	↑	↓	↑	↓	↑	↑
Acidosis	+	± Alkalosis	+	± Alkalosis	+	+
Elevated metabolites	17-OHP	DOC, 11-deoxycortisol	Corticosterone, ±18-hydroxy-corticosterone	DOC corticosterone,	DHEA, 17Δ⁵Preg	None
Reference	(13)	(13)	(14)	(15)	(6)	

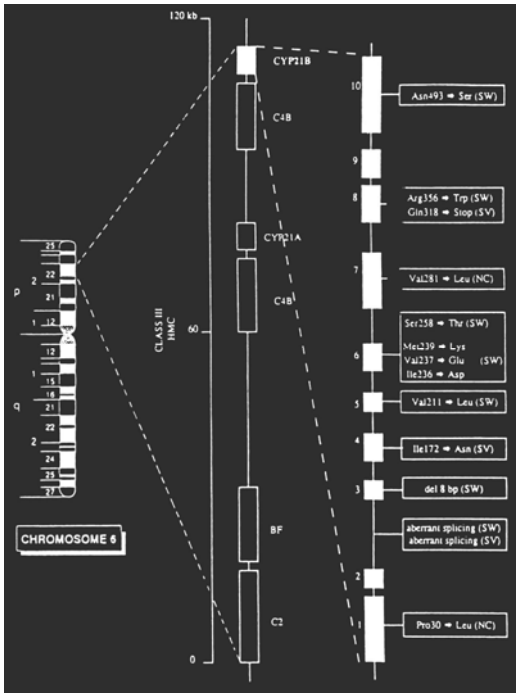
17-OHP, 17-Hydroxyprogesterone; DOC, deoxycorticosterone; DHEA, dehydroepiandrosterone; 17Δ⁵Preg, 17-Δ⁵-hydroxypregnenolone.

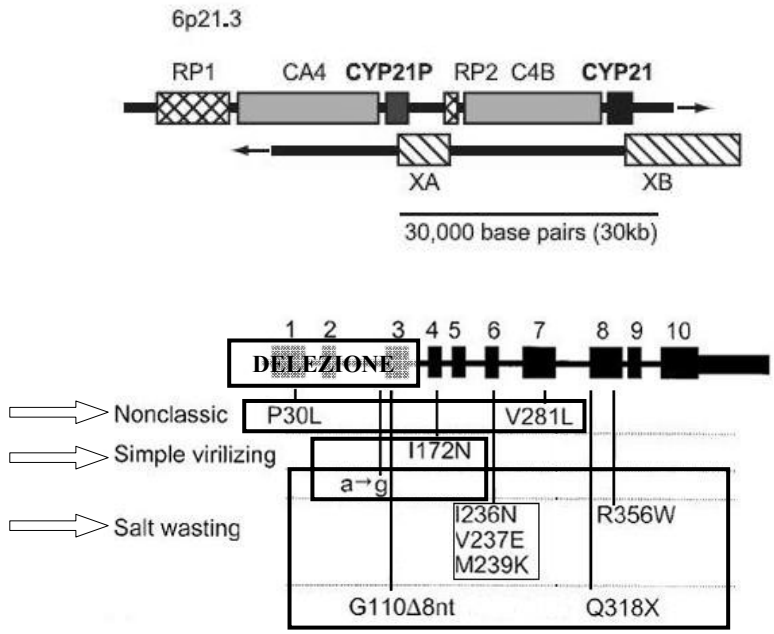


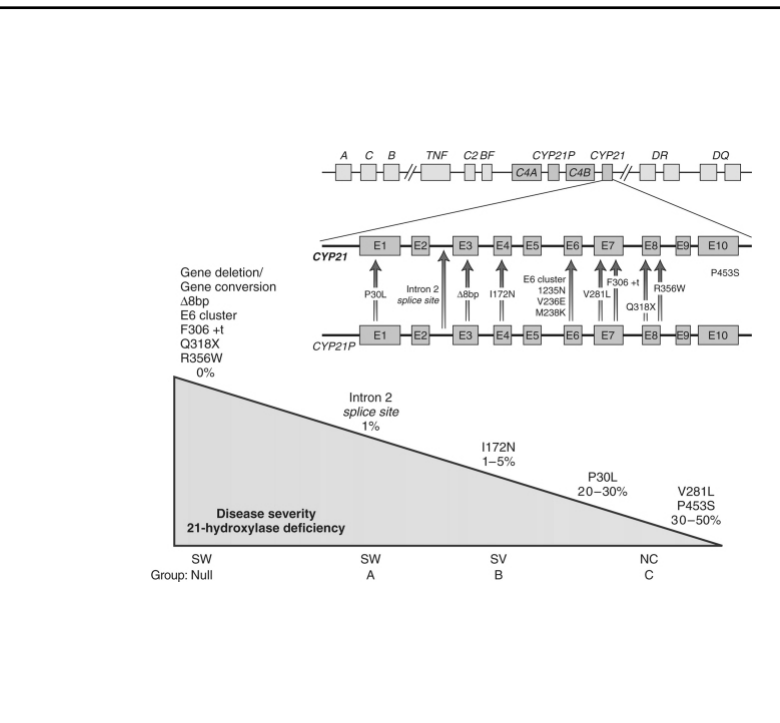




Fenotipo	CLASSICO SW		CLASSICO SV		NON CLASSICO	
	♂	♀	♂	♀	♂	♀
Età diagnosi	0-6 mesi	0-1 mese	2-4 anni	0-24 mesi	adulta	adulta
Genitali	normali	ambigui	normali	ambigui	normale	+/- ↑clitoride
Aldosterone	↓		normale		normale	
Cortisolo	↓		↓		normale	
17-OHP	>200 ng/mL		>100-200 ng/mL		15-100 ng/mL (post Synacthen)	
Incidenza	1: 20000		1: 60000		1: 1000	







IPERPLASIA SURRENALE CONGENITA DA DEFICIT 21-IDROSSILASI: FORMA CLASSICA

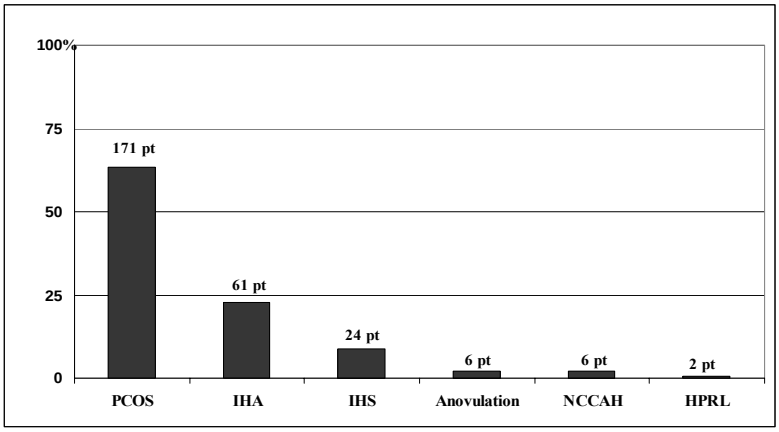
- **COMPARSA FETALE**
- **VIRILIZZAZIONE E CAMBIAMENTO SESSO F/M**
- **17OHP ALTO, ACTH ALTO, A E T ALTI**
- **PERDITA DI SALI DISIDRATAZIONE**
- **PRESENZA UTERO**
- **SE CURATA ALLA NASCITA FEMMINA NORMALE**

IPERPLASIA SURRENALE CONGENITA DA DEFICIT 21-IDROSSILASI: FORMA NON-CLASSICA O LATE-ONSET

- **COMPARSA PUBERALE/ADULTA**
- **IRSUTISMO, AMENORREA**
- **17OHP N/ALTO, ACTH N, A E T ALTI**
- **NO PERDITA DI SALI DISIDRATAZIONE**
- **PRESENZA UTERO**
- **SE CURATA NORMALE RIPRODUZIONE**

A Prospective Study of the Prevalence of Nonclassical Congenital Adrenal Hyperplasia among Women Presenting with Hyperandrogenic Symptoms and Signs
Héctor F. Escobar-Morreale, Raul Sanchón, and José L. San Millan
J Clin Endocrinol Metab, February 2008, 93(2):527-533

PREVALENCE'S RESULTS



CLINICAL VARIABLES, ADRENAL STEROIDS PROFILES, CYP21 GENOTYPES OF NCCAH WOMEN

Patient	Age (yr)	Hirsutism score	Virilization	Ovulatory dysfunction	Basal 17OHP (ng/mL)	ACTH-stimulated 17OHP (ng/mL)	CYP21 genotype
1	28	18	Mild	Amenorrhea	45.6	62.3	V281L/deletion
2	13	13	No	Oligomenorrhea	6.5	28.4	V281L/V281L
3	43	11	No	Oligomenorrhea	2.1	40.9	V281L/R356W
4	25	9	No	Oligomenorrhea	1.7	11.7	V281L/deletion
5	20	10	Mild	Reduced luteal P4	7.7	47.7	V281L+I_2g/V281L
6	20	19	No	Oligomenorrhea	4.9	27.8	P453S/conversion