BTesticolul.

Celule Leidig -- secretie de TST, putin E2, DHT. in principal DHT e obtinut prin metabolizare intracelulara prin act. 5 alpha reductazei 2( enzima microzomala cu act optima in mediul acid). Au actiune la nivel nuclear prin legare de rec de androgeni de pe CRZ X.

tubi seminiferi -- cel Sertoli - rol in maturarea spz si in bariera hematotesticulara

-- spermatogonii in diferite stadii de maturare spermatogonie --> spermatocit primar --> spermatocit sec --> spermatide (23 crz) --> spz. Dureaza 64 zile,

Spz ajung din ducte in rete testis apoi in ductele eferente apoi in epididim, unde mai stau 12-14 zile apoi in duct deferent. Unde ajunge secr veziculelor seminale - fructoza, 80% din vol spermei. Apoi se deschide in uretra prostatica, unde vine secr prostatica, cu spermine, citric acid, cholesterol, phospholipids, fibrinolysin, fibrinogenase, zinc, acid phosphatase, and prostate-specific antigen.

Control secretie : GNRH --> LH --> TST. TST inhiba secr de LH, prin aromatizare locala la E2. DHT determina scaderea frecventei pulsurilor de LH, E2 determina scaderea amplitudinii pulsurilor de LH.

GNRH --> FSH --> cel sertoli --> testosteron binding protein --> concentratie crescuta de TST intratesticular pt spermatogeneza. In plus act pe cel germinale pt initiere spermatogeneza. Cel sertoli secr Inhibina B care determina feedback negativ pe FSH, fara sa influenteze LH.

Cel sertoli mai secreta IGF1, transferina, AMH.

In sange TST circula legat de SHBG, Albumina, doar 2% este liber.

SHBG increased by estrogen, tamoxifen, phenytoin, or thyroid hormone administration and by hyperthyroidism and cirrhosis and are decreased by exogenous androgens, glucocorticoids, or growth hormone and by hypothyroidism, acromegaly, obesity, and hyperinsulinemic states.

Intra in celula si se leaga de rec nuclear-> activare sinteza genica

La adult penis 12-16 cm, vol testicular 15ml (= 3,5-5,5 cm lungime cu 2,5-3,5 cm latime).

Cauze:

● Hypothalamic-Pituitary Disorders:

Panhypopituitarism

Isolated LH deficiency (fertile eunuch)

Isolated FSH deficiency

LH and FSH deficiency

a. With normal sense of smell

b. With hyposmia or anosmia (Kallmann syndrome)

c. With complex neurologic syndromes

Prader-Willi syndrome

Laurence-Moon, Bardet-Biedl syndromes

Möbius syndrome

Lowe syndrome

Cerebellar ataxia

Biologically inactive LH

4Hyperprolactinemia

● Gonadal Abnormalities

Klinefelter syndrome

Other chromosomal defects (XX male, XY/XXY, XX/XXY, XXXY, XXXXY, XXYY, XYY)

Bilateral anorchia (vanishing testes syndrome)

Leydig cell aplasia

Cryptorchidism

Noonan syndrome

Myotonic dystrophy

Adult seminiferous tubule failure

Adult Leydig cell failure

Defects in androgen biosynthesis

●Defects in Androgen Action

Complete androgen insensitivity (testicular feminization)

Incomplete androgen insensitivity

Insuficienta de tubi seminiferi:

♢ mumps or gonococcal orchitis, l

♢leprosy,

♢ cryptorchidism,

♢irradiation,

♢ uremia,

♢ alcoholism,

♢paraplegia,

♢ lead poisoning,

♢ antineoplastic agents such as cyclophosphamide, chlorambucil, vincristine, methotrexate, and procarbazine. ♢ Vascular insufficiency resulting from spermatic artery damage during herniorrhaphy, testicular torsion, or sickle cell anemia may also selectively damage the tubules.

♢ varicoceles.

♢micro deletii crz Y - deletions of portions of the Y chromosome may also present as adult seminiferous tubule failure.

♢ idiopathic.

Clinic infertilitate, tst usor mai mici prin atrofiere de tubi, fara ginecomastie sau semne de hipogonadism

TST, LH normale, FSH crescut, inhibina B scazuta, oligo/azoospermie

Trt medicamentos - nu ajuta, eventual ch pt varicocel, dar nu e clar dc are efect. La postiradiere, isi pot recapata functia. Postinfectios, vascular - nu.

ANDROPAUZA

Scaderea act cel Leydig, lent dupa 50 ani. Scade TST, mai ales TST liberprin crestere SHBG. Creste LH si scade raspunsul la betaHCG. Probabil prin afectare vasculara

Clinic - semne de deficit de hh.

HIPOGONADISM LA BARBATI adulti

Simptome + TST scazut !! Poate fi scazut temporar de boli acute/grave, malnutritie.

Variatii circadiene (60-140ng/dl), pulsuri la 90 minute

RIA - TST mai mare de 280-300ng/dl

TST ( liber dc banuiesc afectare de SHBG), cel putin de 2 ori. Apoi FSH, LH.

daca crescute - kariotip. Dc scazute - prl, fier, rmn de hpf

Nu fac screening pt hipogonadism in pop gen dar caut la cei cu patologie hipofizara, incl iatrogena, Hiv Cu scadere in greutate, trt cu CoT, BMD scazut, trt cu opioizi. Fx la trauma minima