PITUITARY GLAND

ANTERIOR PITUITARY ADENOMA
most common

microadenoma <1
macroadenoma >1
- hyperpituitarism
- hypopituitarism
- optic nerve compression

PITUITARY APOPLEXY
Sudden hemorrhage
- hypopituitarism
- Loss of ACTH

post partum
Sheehan syndrome

PITUITARY BLASTOMA
Cushing syndrome
undifferentiated cells
children <2 years

THYROTROPH ADENOMA
TSH-producing
hyperthyroidism

GONADOTROPH ADENOMA
LH and FSH
- less → hypopituitarism
- more -rare → **macroorchidism, hyperspermia, ovarian hyperstimulation**

SOMATOTROPH ADENOMA
Growth-hormone secreting
densely and sparsely granulated variants
diabetes, hypertension, GI cancer, gonadal dysfunction

2
- in children: Gigantism
- in adults: Acromegaly

LACTOTROPH ADENOMA (PROLACTINOMA)
most common functioning
calcification (pituitary stones)

very high prolactin
Chronic renal failure

1
Primary hypothyroidism
low dopamine = lactotroph hyperplasia

insulin resistance
amenorrhea, galactorrhea, infertility and loss of libido

CORTICOTROPH ADENOMA
Crooke cell adenoma **ring-like cytokeratin**

PAS stain positive

Cushing Disease
central obesity, hypertension, hyperglycemia

Nelson syndrome
skin hyperpigmentation

POSTERIOR PITUITARY GLAND

(low ADH)

polyurea, polydipsia, dehydration

inability of kidneys to reabsorb fluids
head trauma
genetic: mutation in **arginine**

Diabetes Insipidus (DI)

(high ADH)

blood volume remains normal

paraneoplastic syndrome in lung

oligourea, hyponatremia,
cerebral edema, brain dysfunction

SIADH

CRANIOPHARYNGIOMA

Rathke pouch hypopituitarism Bimodal age

squamous cells

no keratin
no cyst
no calcification

Papillary CPh

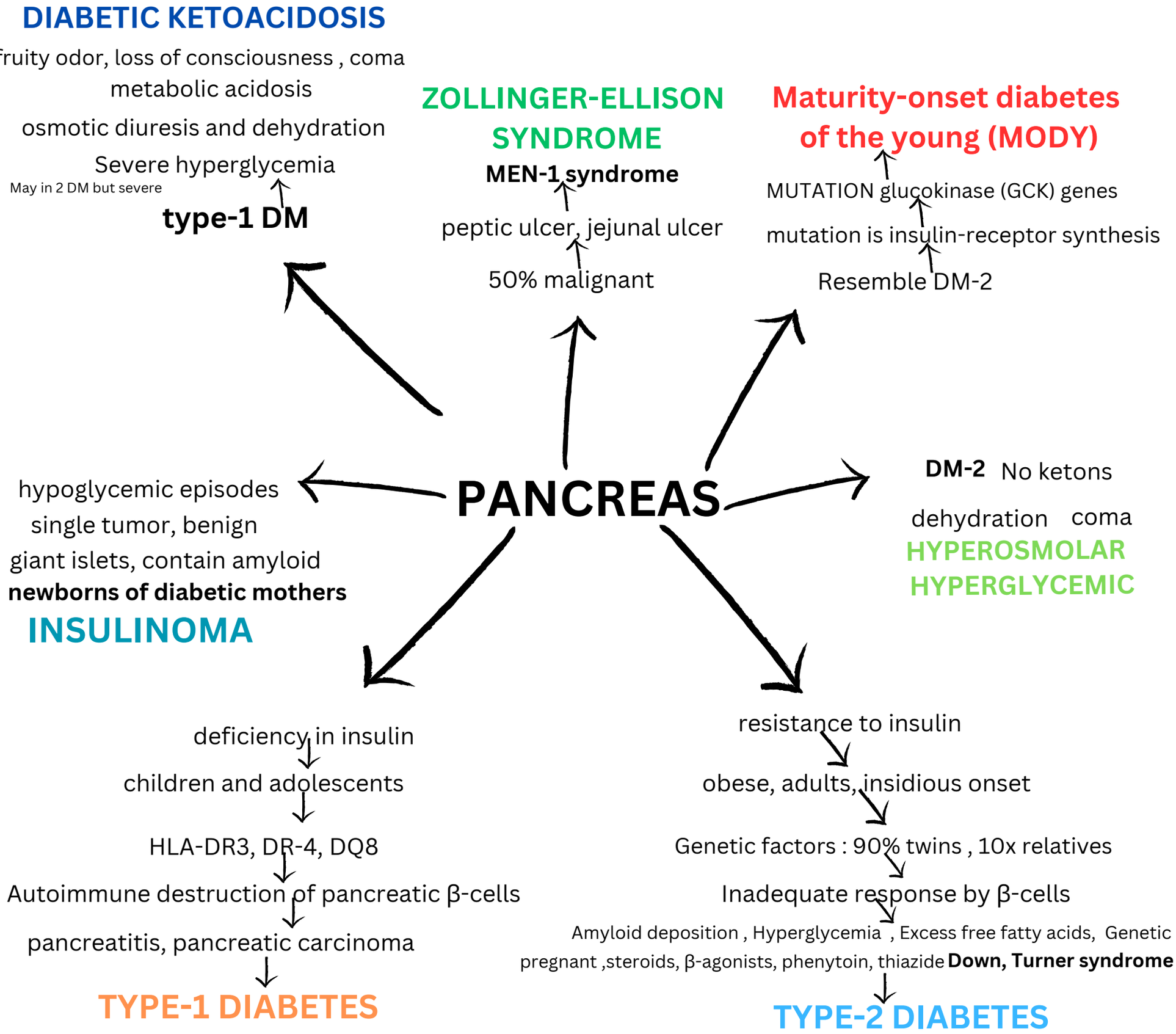
adults

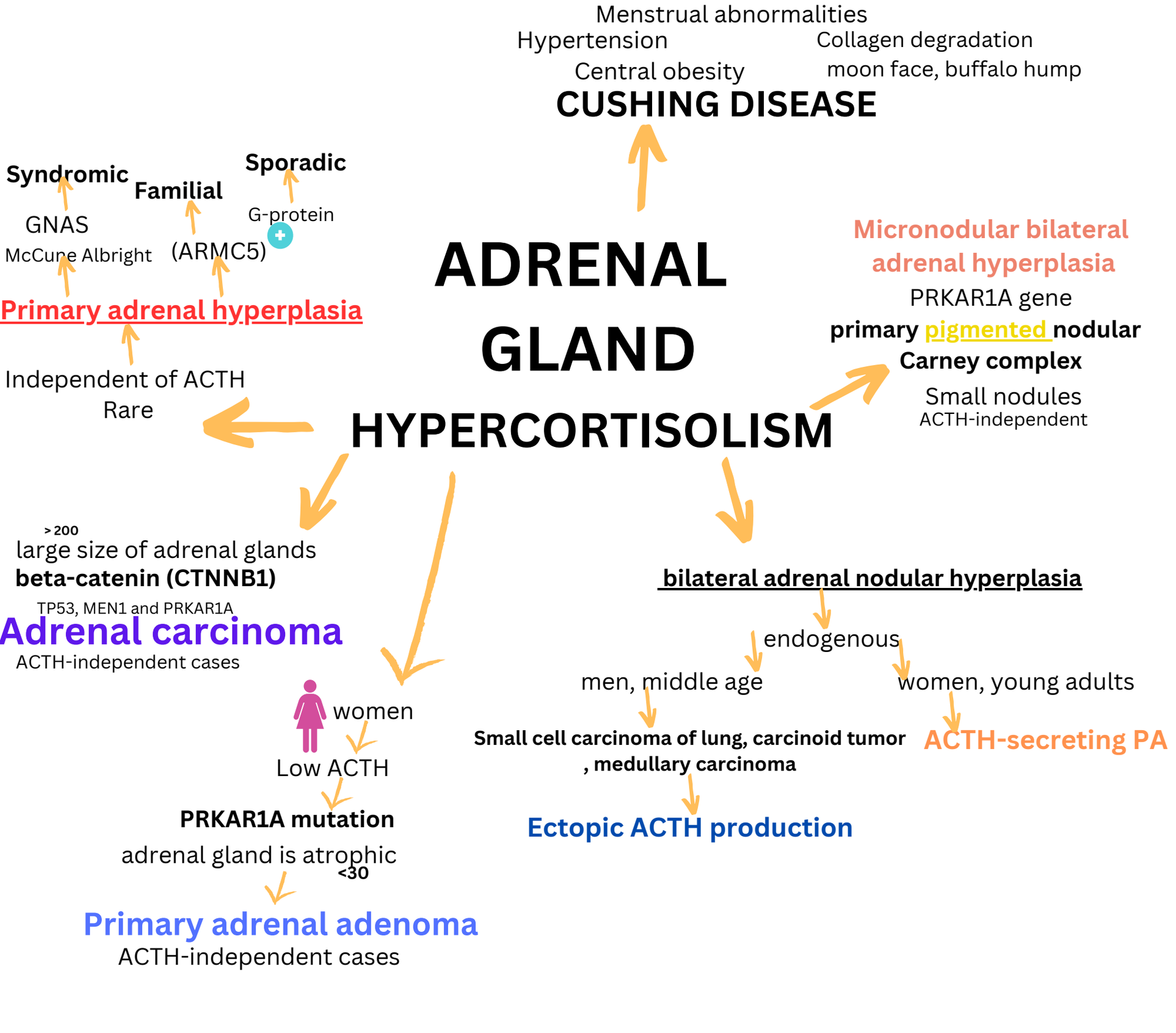
keratin
cyst
calcification

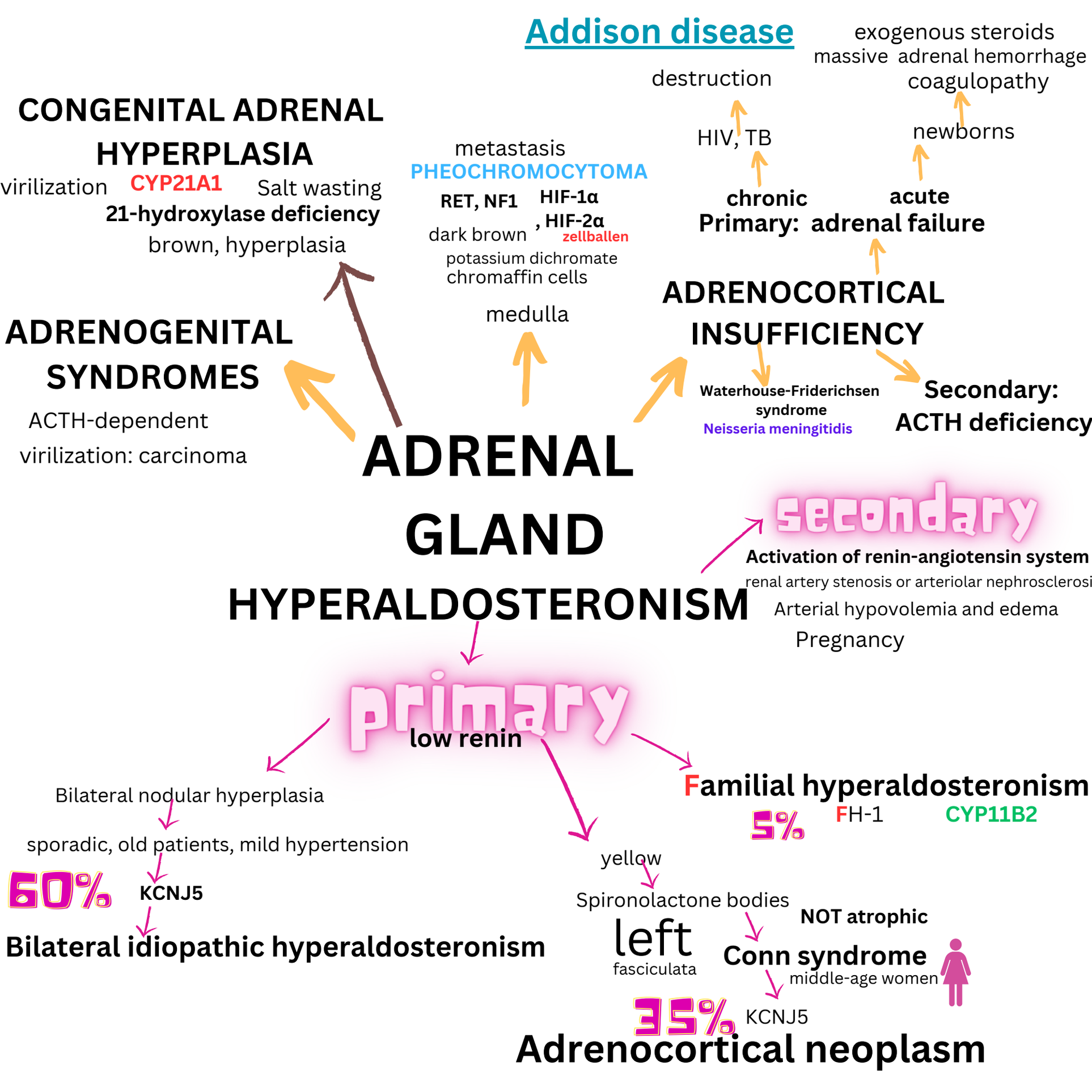
Adamantinoma is a rare bone cancer

“machine oil”

children


DIABETIC KETOACIDOSIS
fruity odor, loss of consciousness , coma
metabolic acidosis
osmotic diuresis and dehydration
Severe hyperglycemia
May in 2 DM but severe
type-1 DM
ZOLLINGER-ELLISON SYNDROME
MEN-1 syndrome
peptic ulcer, jejunal ulcer
50% malignant
Maturity-onset diabetes of the young (MODY)
MUTATION glucokinase (GCK) genes
mutation is insulin-receptor synthesis
Resemble DM-2
hypoglycemic episodes
single tumor, benign
giant islets, contain amyloid
newborns of diabetic mothers
INSULINOMA
PANCREAS
DM-2 No ketons
dehydration coma
HYPEROSMOLAR
HYPERGLYCEMIC
deficiency in insulin
children and adolescents
HLA-DR3, DR-4, DQ8
Autoimmune destruction of pancreatic β-cells
pancreatitis, pancreatic carcinoma
TYPE-1 DIABETES
resistance to insulin
obese, adults, insidious onset
Genetic factors : 90% twins , 10x relatives
Inadequate response by β-cells
Amyloid deposition , Hyperglycemia , Excess free fatty acids, Genetic
pregnant ,steroids, β-agonists, phenytoin, thiazide Down, Turner syndrome
TYPE-2 DIABETES


Menstrual abnormalities
Hypertension
Collagen degradation
Central obesity
moon face, buffalo hump
CUSHING DISEASE
ADRENAL GLAND HYPERCORTISOLISM
Syndromic
Familial
Sporadic
GNAS
McCune Albright
(ARMC5)
G-protein
Primary adrenal hyperplasia
Independent of ACTH
Rare
Micronodular bilateral adrenal hyperplasia
PRKAR1A gene
primary pigmented nodular
Carney complex
Small nodules
ACTH-independent
>200
large size of adrenal glands
beta-catenin (CTNNB1)
TP53, MEN1 and PRKAR1A
Adrenal carcinoma
ACTH-independent cases
bilateral adrenal nodular hyperplasia
endogenous
men, middle age
women, young adults
women
Low ACTH
PRKAR1A mutation
adrenal gland is atrophic
<30
Primary adrenal adenoma
ACTH-independent cases
Small cell carcinoma of lung, carcinoid tumor , medullary carcinoma
ACTH-secreting PA
Ectopic ACTH production


Addison disease
exogenous steroids
massive adrenal hemorrhage
coagulopathy
destruction
HIV, TB
newborns
CONGENITAL ADRENAL HYPERPLASIA
virilization
CYP21A1
Salt wasting
21-hydroxylase deficiency
brown, hyperplasia
metastasis
PHEOCHROMOCYTOMA
RET, NF1
HIF-1α
, HIF-2α
dark brown
zellballen
potassium dichromate
chromaffin cells
medulla
chronic
acute
Primary: adrenal failure
ADRENOCORTICAL INSUFFICIENCY
ADRENOGENITAL SYNDROMES
ACTH-dependent
virilization: carcinoma
Waterhouse-Friderichsen syndrome
Neisseria meningitidis
Secondary: ACTH deficiency
ADRENAL GLAND
HYPERALDOSTERONISM
secondary
Activation of renin-angiotensin system
renal artery stenosis or arteriolar nephrosclerosi
Arterial hypovolemia and edema
Pregnancy
primary
low renin
Bilateral nodular hyperplasia
sporadic, old patients, mild hypertension
60%
KCNJ5
Bilateral idiopathic hyperaldosteronism
Familial hyperaldosteronism
5%
FH-1
CYP11B2
yellow
Spironolactone bodies
left
fasciculata
NOT atrophic
Conn syndrome
middle-age women
35%
KCNJ5
Adrenocortical neoplasm