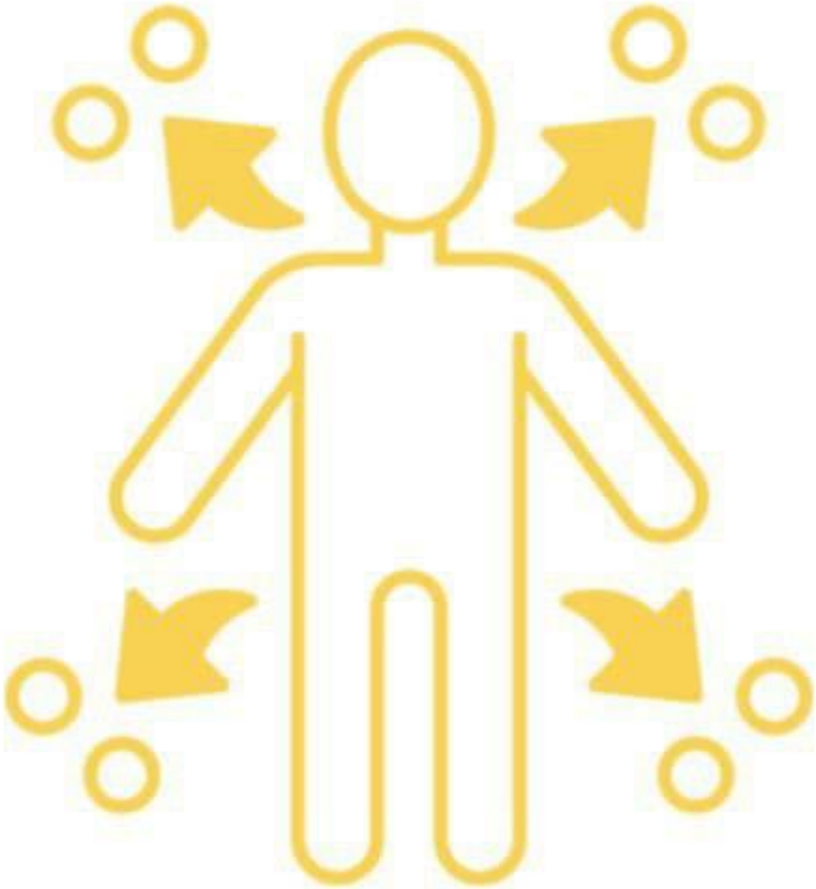

MIRACLE Academy

سموم

زميلتكم نهى حسن

لجان الدفعات

قال تعالى (يَرْفَعِ اللَّهُ الَّذِينَ آمَنُوا مِنكُمْ وَالَّذِينَ أُوتُوا الْعِلْمَ دَرَجَاتٍ)

هسا احنا متعودين دايما فش خطر من الفايتميز
وانو نقدر نوخذهم وقت ما بدنا
ولكن لاا
وهون رح نحكي عن اكثر فايتمين نستخدمه ويعمل toxic
وطبعا ما نعطيهم الا الي حاجه الهم ومش على الطالعه والنازله

Vit Aعشان حب الشباب
ورح نحكي عن vit B12
Vit C

HYPERVITAMINOSIS AND ANTIHISTAMINES

حاجه الانسان للVitamenجدا قليله ويكون الجسم بالغالب مش قادر يصنعها لذلك نحصل عليها من Diet

هي تعتبر co enzymeواذا ما كان موجود هاد الكو رح يحس الواحد بالتعب
هي ما تنتج الطاقه وانما تساعد في انتاجها يعني ما بيتنشط الواحد الا اذا كان الواحد تعبان وعنده نقص بهدول ال Vitamen

هدول ال vitamen يعتبرو OTC ولكن للأسف اذا واحد مثلا اخذ Vit B12 وشاف حاله صار منيح يصير هون يوخذ منهم بكميات كبره
في قناعه عند الاغلب انو اذا اخذو كثير منهم رح يتحسنو وهو غلط طبعا

نادر ما حدا ينتحر منهم لذلك بحكي انهم chronic not acute

شرح السلايد الي تحت

Introduction

- **VITAMIN** is an essential substance, needed in tiny amounts to facilitate normal metabolism
- Not synthesized in the body….must be ingested in the diet
- Not provide energy…..BUT….often act as **coenzyme in energy producing reactions**
- OTC
- large potential for misuse and toxicity……beliefs that megadoses of vitamins prevent or ameliorate the effects of aging and cancer
- Only **rarely** is an **acute vitamins** toxicity reaction reported, most cases involved chronic utilization

Introduction

- **Recommended Daily Allowance (RDA)**.....vit deficiency / hypervitaminosis

المقصود هون انو اكثر حد ممكن يوخذه باليوم الواحد

- **Megadosing**: a dose that is **10 or more** times the recommended daily allowance (RDA)

Vitamins

- **A**, **D**, E, K
- **Vitamin C**
- **Thiamine (B1)**
- Riboflavin(B2)
- **Niacin (B3)**
- **Pyridoxine (B6)**
- **Cyanocobalamin (B12)**
- Folic acid (B9)
- Biotin (B7)
- Pantothenic acid (B5)

في عده أنواع منهم
Water soluble
Fat solubleوهاد الأخطر لانه يطول ليطلع من الجسم ويتراكم بالجسم

Vitamin **A….Retinoids**

- First vitamin recognized
- ***RDA***: 3000IU

TOXICOKINETICS OF VITAMIN A

- More than **60,000** instances of vitamin toxicity are reported **annually to US** poison control centers
- **fat-soluble vitamins have a higher potential** for toxicity than do water-soluble vitamins (Owing to their ability to accumulate in the body).

يحكو في اكثير من60000 شحص يتسمم سنويا ب Vit A

VITAMIN A TOXICITY

- Acute ingestion >12,000 IU/kg. Chronic ingestion >25,000 IU/d for 2–3 weeks. **symptoms**:

- **GI**
  - Nausea , vomiting, gingivitis, mouth fissures, wt loss
- **CNS**
  - Drowsiness, Headache, irritability, increased intracranial pressure, vision changes, dizziness
- **Skin**
  - Dry, peeling skin, cheilosis, pruritis, alopecia
- **Muscles and joints**
  - Myalgia, arthralgia
- **Other**:
  - Hepatic enlargement, ascites, hepatocellular injury, elevated hepatic enzymes, hypercalcemia, bony changes

VITAMIN A TOXICITY

- **Teratogenicity:**
- The risk of infant malformations in the first trimester approaches 25-30%.....”retinoic acid dysmorphic syndrome”:.....
- **CNS defects, optic atrophy, cleft palate small or absent ears, thymic and congenital heart defects**

يعمل تشوهات عند هدول ابيبي
بأول 3 اشهر من الحمل
بالاضافه الي اضرار على
CNS

TREATMENT OF VITAMIN A TOXICITY

- Immediate discontinuation, most S&S will disappear within several weeks
- If very huge dose was taken……GI decontamination (administration of activated charcoal)
- High intracranial pressure treated with mannitol, hyperventilation

اول شغله ممكن نعملها بعد التسمم هي نوقف اخذه واذا كان ماخذه بدوز عاليه بعطيه active charcoal
واذا كان بيضغط على الدماغ بعطيه mannitol
hyperventilatioln

VIT Dيعمل توازن بين الكالسيوم والفوسفات
بحيث انو هاد الفايتمين لما نوخذه بزيد نسبه Ca عن طريق بزيد absorbtion ويعمل excretion and bone resorption

في حال الواحد تسمم اقوى عرض رح يظهر
hypercalemia
بالاضافه الى
انو يعمل عند الحامل الى تثبيط PTHعند الابيبي الي رح ينولدو
وهاد يعمل عندهم HYPOCALEMIA
TETANY
SEZIURE

VITAMIN D TOXICITY

- Vit D acts to maintain serum **calcium** and **phosphate** concentration……increase Ca levels by acting on its absorption, excretion and bone resorption

- Manifestations of **vit D toxicity** are related to the effects of **hypercalcemia**

- Hypervitaminosis D & hypercalcemia in pregnant women may **suppress PTH function in the newborn**…..leading to **hypocalcemia**, **tetany** and **seizures**

VITAMIN D TOXICITY

- **4-5 times the RDA can cause toxicity (conc. >200pg/ml)**
- **Symptoms**
  - Hypercalcemia…..(polydipsia, polyuria, weakness, fatigue, anorexia, headache)
  - Altered mental status
  - GI upset
  - Renal tubular injury
  - Occasionally arrhythmias
  - Calcification of soft tissues (heart and lungs)

هاي معناها انو يترسب بهدول الاماكن

TREATMENT OF VITAMIN D TOXICITY

- Immediate discontinuation
- Reducing Ca intake by diet
- If cardiotoxicity due hypercalcemia…..fluids and diuretics
- Administration of glucocorticoids (prednisolone 20-40 mg), inhibit Ca absorption from the gut
- If Ca levels exceed 14mg/dl….Tx with calcitonin (i.m)

اول اشي عليه يوقف اخذه وبعدين
يخفف اخذه من خلال الاكل يعني يقلل الاكل الي يحنتوي على Ca
وبعطيه بعدين
Glucocorticoideحتلى يثبط امتصاص ca
واذا كان لسا مستواه مرتفع بعطيه Calcitonin
يمنع انو caيطلع من العظم وبزيد rxcretion f uren

VITAMIN C-ASCORBIC ACID

- Supplements are available in 100 to 500mg doses and found in high concentrations in green tea

موجود بكميه كبيره بالشاي الأخضر بالاضافه كمان الى الحمضيات

- **RDA** for ascorbic acid is 60mg/day

هاي الجرعه المسموحه لليوم الواحد

VITAMIN C-TOXICITY

- **WATER SOLUBLE VITAMIN….WHAT IS NOT UTILIZED WILL BE EXCRETED IN THE URINE…..**toxicity is rare
- Toxicity is related to the osmotic effects in the intestine…. **nausea and diarrhea**
- Chronic excessive use can produce **increased levels of the metabolite oxalic acid**
- Urinary acidification promotes **calcium oxalate crystal** formation…… nephroliathiasis and nephropathy

CLINICAL MANIFESTATIONS

- **Toxic doses???.....**
- Acute IV doses >1.5 g OR chronic ingestion >4 g/d have produced nephropathy
- Decrease abs of vit B12 يقلل امتصاص Vit B 12
- **MANAGEMENT:**
- Abrupt withdrawal not recommended….rebound deficiency (**scurvy**) following prolonged administration of megadose
- So…..gradual withdrawal

الواحد لما يكون عندو مشكله بهاد Vit رح يعمل نشفان بالوجهه والثم وتساقط بالشعر والتهاب باللثه وهاد ممكن يصير لما يكونو يوخذو كمان كبيره ويوقفوه فجاءه

Antidote for alcohol

THIAMINE (Vit B1)

نحصل عليه بالغالب من الاكل ومن الخميره كمان
ف اذا صار فيه مشكله فهو بسبب نفص الاكل او الي يشرب كحول

- "Antiberiberi".....Vit B1.....Thiamine
- **Source**: rice bran extracts, yeast extracts
- **RDA** of thiamine **is 1.5mg/day**.....Most exceed RDA in diet
- **Deficiency** results from **poor dietary intake** or more commonly from excess alcohol intake??!!
  - *Alcohol interfere with gastric absorption of vit B1 and its conversion to the active form*

THIAMINE (B1) TOXICITY

- Pain on injection and contact dermatitis

يمكن يعمل التهاب للجلد لاي اشي يمسكه

- Anaphylactic reaction after i.v administration
- Transient vasodilation
- Hypotension……vascular collapse
- **MANAGEMENT:**
  - Administration of **epinephrine and antihistamines**
  - Pressor agent may be necessary in extreme cases

زي النسلين لذلك بعالجه بمضادات للحساسيه زي هدول

مش سام الا اذا اخذناه
بكميه كبيره
ولكن اله اثار جانيبه الا
وهي

VITAMIN B_{12} TOXICITY

- Vitamin B12 is non toxic unless very huge quantities are ingested
- Rare instances of allergic reactions…..pruritis, urticaria, anaphylaxis
- Contact dermatitis
- **Management**: discontinuation

العلاج اوقفه

Anti Histamine Classification

- H_1 antagonists are divided into 1st and 2nd generation;
- **1st generation** has strong sedative effects (enter the CNS) and can block autonomic receptors
- **2nd generation**: incomplete distribution to CNS→ less sedation

H_1 Receptor Antagonists

هم موجودين بكثير لذلكcompensation ممكن الواحد يوخذ منهم جرعه كبيره وهو مش قاصد

- **Competitive antagonists** of H1 receptor found in many OTC and prescription medication alone or in combined formulation

- **Major therapeutic uses:**

بستخدمهم لدوار الحكه بالرشح يساعد على النوم

1. **motion sickness,**
2. **control of allergy-related itching,**
3. **cough and cold palliation**
4. **and used as sleep aids**

Toxicity:

- H1 antagonists are rarely ingested for suicidal purposes and have a **high therapeutic/toxic ratio**
- **Wide spectrum of side effects**
- **Sedation, antimuscarinic action** → most common undesirable actions

فش حدا ينتحر فيهم بالاضافه انو high therapeutic index يعني بطول ليوصل للجرعه السامه

Toxicity:

First generation

- **Toxic dose.** The estimated fatal oral dose of diphenhydramine is 20–40 mg/kg
- In general, toxicity occurs after ingestion of 3–5 times the usual daily dose
- **Children** are **more sensitive** to the toxic effects of antihistamines than are adults
- The non-sedating agents are associated with less toxicity

الجيل الثاني
اقل عرضه
لتسمم من
الجيل الاول

Toxicity:

كله حفظ

- CNS: sedation (most common with 1st generation), coma, delirium, hallucinations, psychomotor agitation (myoclonic or choreoathetoid movements), or convulsions

- Anticholinergic effects: hyperpyrexia, tachycardia, HTN, urinary retention, dilated pupils, dry mouth

- Reports of cholinergic toxicity upon stopping taking the drug

اذا بنوقفه فجاه
ممكن يصير
اعراض تشبهه
cholenergic

Toxicity:

- **CV effects**: massive diphenhydramine overdose has been reported to cause **myocardial depression** and QRS widening….similar to TCAs overdose

هاد انسحب ولكن terfenadine ما انسحب

- Overdosage of **astemizole or terfenadine** may induce cardiac arrhythmias through QT prolongation (removed from the US market)

Drug Interactions:

تكون هاي بالجيل الثاني اكبر من الاول

- **Arrhythmia** occur particularly **when taken with P450 inhibitor** (erythromycin, ketoconazole, grapefruit juice….)

وهون بزيد نسبه antihestamen بالدم

- Significant **sedation** when taken with **alcohol, benzodiazepines** → C/I while driving or operating machinery

بزيد sedationاذا اخذته مع هدول

Treatment

ما في antidote ولكن ممكن
اعطي antidote for
anticolenergic

- **Treatment <u>is supportive....</u>stabilization and reduce amount absorbable**

1. Maintain an open airway and assist ventilation if necessary

benzodiazeben بعطي
وهاي باخر المراحل
بعطي بس

anticolenergic

2. Treat <u>coma</u>, <u>seizures</u>, <u>hyperthermia</u>, and atypical <u>ventricular tachycardia</u> if they occur

3. Monitor the patient for at least 6–8 hours after ingestion.

Treatment

- **Decontamination**:
  - Administer activated charcoal orally
  - Gastric lavage not necessary
  - N.B: GI decontamination helpful even in late-presenting patients because of slowed GI motility
- **Enhanced elimination**
  - Hemodialysis, hemoperfusion, peritoneal dialysis, and repeat-dose activated charcoal are **not effective** in removing antihistamines

اذا كان كبيره
كثير كبيره

Treatment

- There is **no specific antidote** for antihistamine overdose
- **Physostigmine** used for the treatment of **severe delirium** or **tachycardia**
- Not recommended routinely! may cause toxic effects as seizures, bronchoconstriction, bradycardia, asystole (may need to be reversed by atropine)

ولكن لازم نكون كثير
حذرين من استخدامه لانه
سام
ونستخدمه في حاله صارت
الاعراض الجانبيه كثيره
وبطلنا نقدر نسيطر عليهم