Medicine and Nutrition: Collaboration to Combat Disease

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Case 1
49 year old female
Referred by primary physician for diabetes
PMHx: Diabetes, hypertension, 2 strokes, high cholesterol
Medications: Atorvastatin 10 mg (Lipitor), Lisinopril 20 mg, Metformin 500 mg BID, Plavix 75 mg, women's multivitamin gummies 200 mcg , Xarelto 20 mg
Social: Non-smoker, drinks 3 glasses wine per night
BP 145/90 RAS
Height 5'6" (167.64 cm) Weight 215 lb. (97.5 kg) BMI 34.7
FBS 273, A1C unknown
Does not like taking medications, poor compliance with follow-up visits.

Body Mass Index
- Underweight: <18.5
- Normal weight: 18.5 – 24.9
- Overweight: 25.0 – 29.9
- Class I obesity: 30.0 – 34.9
- Class II obesity: 35.0 – 39.9
- Class III obesity: > or 40

Hypertensive Categories
- Normal: less than 120 or less than 80
- Elevated: 120-129 or less than 80
- Stage I: 130-139 or 80-89
- Stage 2: 140 or higher or 90 or higher
- Hypertensive crisis: >180 and/or higher than 120

Diabetes and Macronutrients
- Carbohydrate intake has a direct effect on postprandial glucose levels and is the primary macronutrient of concern.
- Glycemic index and glycemic load – quality of carbohydrate over quantity
    - Need fiber (which is in fibrous carbohydrates)
- No ideal/prescriptive percentages, but on average:
    - Carbohydrates 45%
    - Protein 16%-18%
    - Fat 36%-40%
- Mediterranean eating pattern reported with largest improvement in A1C at 1 year

Indications for Bariatric Surgery

- BMI > 40
- BMI > 35 with Comorbidities (e.g. DM, HTN)
- Consider for BMI > 30 with difficult to treat DM or metabolic syndrome
- Bariatric Surgery prevent to result in at least 10% weight reduction and long-term mortality benefits.
- Obese adults are 6X more likely to develop high blood pressure
- Obesity highly correlated to diabetes type II

Obesity & Caloric Intake
- About 22 calories/kg/day for average weight maintenance
- About 3500 calories of excess intake equates to one pound of weight gain under normal metabolic conditions

Points on Selected Diets
- DASH – Hypertension
- Low Fat Dairy – Gout
- Low Protein – Parkinson's
- Ketogenic – Epilepsy
- Mediterranean – Alzheimer's

Moderate & Severe ETOH Intake
Moderate Intake:
- Women <7/week
- Men <7/week

Heavy Intake:
- Women <14/week
- Men >14/week

Selected Vitamin & Supplement Points
- MVI no proven benefit in most patients with normal diet
- Beta carotene increases risk of lung cancer in smokers
- Vitamin E supplementation potentially increases cardiovascular events

Case 2
35 year old female
CC: blurry vision at distance, hasn't worn specs for 1 year
PMHx: HIV (unknown CD4 and viral load), ovarian cysts
Meds: Prezcobix, Descovy
FHx: Diabetes (mother)
Social Hx: former smoker, alcohol occasionally, caffeine once daily
BP: 130/89
Height 5'5" (165 cm
Weight 252 lbs (115 kg)
BMI 41.9

HIV & Cardiovascular Disease

- HIV = about double the risk for CVD

Case 3
21 year old female
CC: blurry vision since she broke specs
LEE: 3 years ago
PMHx: unremarkable
FHx: Diabetes (mother and grandmother)
Meds: None (no birth control)
Social Hx: No smoking, denies alcohol intake, caffeine occasionally
BP 115/70
POHx: optic nerve swelling OU
Discovered at CEE 3 years earlier
Reports MRI was 'normal' and lumbar puncture was performed and 'high' (no report available).
Rx's acetazolamide – D/C due to metallic taste in mouth, educated on weight loss but has gained 20 pounds in past 2 years
Height 5'4" (164 cm)
Weight 220 lbs. (99.8 kg)
BMI 37.8

Idiopathic Intracranial Hypertension (IIH)

- Elevated intracranial pressure of unknown cause predominantly in young women of childbearing age.
- Daily headache, pulse synchronous tinnitus, transient visual obscurations and papilledema with associated visual loss.
- Idiopathic Intracranial Hypertension Treatment Trial (IIHTT), multicenter, double-blind, randomized, placebo-controlled study
    - Weight-reduction and low sodium diet plus acetazolamide VS. diet plus placebo in subjects with mild visual loss.
    - Statistically significant improvements in visual field function, quality of life measures, papilledema grade and CSF pressure in the acetazolamide group.
    - Clinical improvement reported with about 6% weight loss.
    - Acetazolamide-plus-diet patients lost twice as much weight as placebo-plus-diet patients but the acetazolamide effect on PMD was independent of the weight loss.
    - Treatment failure was much less common in the acetazolamide-plus-diet group compared to the placebo-plus-diet group and risk factors for treatment failure were presence of high grade papilledema and lower ETDRS visual acuity measures at baseline.
- Avoidance of excess sodium intake to reduce symptoms
- Refer to licensed dietician for assistance with weight loss

Case 4

75 year old white female
CC: Decreased distance and near vision in both eyes for several years.
PMX: Hypertension, high cholesterol, arthritis, anemia
Medications: aspirin 81mg, atorvastatin 20 mg QD (Lipitor), Lisinopril 20 mg QD
Social: Past smoker 1 pack a day (quit 5 years ago), alcohol approx. 3 drinks/week.
BP: 110/70
Height: 5'3" (161.5 cm) Weight: 85 lb.(38.5 kg) BMI: 15
Other: fatigue, poor appetite, paucity of vegetable intake

Giant cell arteritis
- CRP and ESR
- ESR can be affected by Lipitor and produce a false negative.
- CRP would be the more sensitive test in this patient.

Supplement Considerations:
- Past history of smoking, supplementation should not include beta carotene.
- Lisinopril can deplete zinc, may need AREDS 2 supplement.
- Consider genetic testing for AMD risk alleles since high risk CFH may do worse with zinc.
- B-complex deficiency (B-12 anemia) may cause failure to thrive, frailty, anorexia/poor appetite, and low weight.
- Poor appetite may need nutritional meal replacements.
- Diet consisting of high sugar causes increased inflammation.

Case 5
46 year old white female
CC: Unusual sensation of "pulling" in her eyes. Feels she has trouble seeing on the right side more than left. Physically she feels "bad" with weakness.
PMX: Depression, anxiety, osteoporosis
Medications: Calcium 500 + vitamin D 500 mg, cipro 500 mg BID, amitriptyline
BP: 100/58 RAS, pulse 60
Height: 5'6" Weight: 162 lb. (73.48 kg) BMI: 26.15
Additional history: poor appetite, lack of concentration
Visual acuity: 20/20 OD, OS
Pupils: +1 APD OD
EOM: AD-duction deficit OS, AB-duction nystagmus and overshoot OD
IOP: 15 mm Hg OD, 16 mm Hg OS
Fundus: Diffuse optic nerve pallor OD, pink OS, vessels and fundus normal OU.
OCT: Abnormal OD (reduced NFL and GCC), normal OS
C/O nausea and occasionally vomiting.
Feels her symptoms are worse with the summer heat.
Wearing cool pack around her neck
BP=95/60, pulse 57, BMI same (26)

Dietary Considerations for Multiple Sclerosis
- Increase high quality fats (polyunsaturated)

- Low sugar intake
- Decrease or eliminate processed foods
- Increase fiber/prebiotic intake
- Foods and/or supplements with probiotics
- Vitamin D
- Calcium with Vitamin K for absorption

Oculomotor Dysfunction & Wernicke Encephalopathy
- Oculomotor dysfunction in a person with alcohol use disorder or history of Bariatric surgery should prompt the consideration of Wernicke encephalopathy
- Low threshold to treat with thiamine

Case 6
61 year old male
CC: Blurry vision OU
PMHx
Open heart surgery: 5 heart attacks', stage 2 renal failure, hypertension, HIV (viral load "undetectable"), fatty tumor abdomen
Social: Former smoker
Allergy: PCN
Height: 5'9" (175 cm)
Weight: 260 lbs. (118 kg)
BMI: 38.4 BP: 130/90
Medication: alprazolam, gabapentin, Tylenol 3, Intelence, Isentress, Isosorbide monohydrate ER, Nifedical XL, Pantoprazole, Quinapril, Simvastatin, Toprol, Truvada
BCVA 20/20 OD, OS
Pupils: Normal
CF: Full
EOM's: Normal
Adnexa: Prolapsed orbital fat OU
Fundus: Attenuated arterioles, C/D 0.25 OD, OS, NO hemorrhages or CWS

Selected Points in HIV Management in 2020
- U = U (undetectable = untransmittable
- Any CD4 Count - indication for treatment

Obesity, OSA, & Resistant Hypertension
- Obesity closely related to OSA (large neck circumference, abdominal effect on diaphragm)
- Resistant hypertension and OSA
- Clues to OSA: snoring, apneic episodes noted by bed partner, frequent nocturnal urination, messy bed in am