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NUTR 245

Dr. Hilpert

28 October 2013

<div align="center">Case Study #1: Heart Disease</div>

Part I

1. ***What factors found in the medical and social history are pertinent for determining Mr.***

    Watkins' heart disease risk?

Medical history	Social history
- mild obesity for past 10 years - mild hypertension - abnormal lipid profile - brother has CAD (family history)	- tobacco use: 1 ppd for 30 yrs. - alcohol use: 2 cans of beer per week - no physical activity

2. ***Briefly describe the DASH eating plan.***

    The DASH eating plan developed in the late 1990s to lower blood pressure. It is a diet

    high in fruits, vegetables, and low-fat dairy products. It emphasizes 8-9 servings of fruit

    and vegetables and three servings of low-fat dairy products. It also includes whole-grain

    products, fish, poultry, and nuts. The DASH diet is a diet rich in many nutrients

    including magnesium, potassium, calcium, protein, and fiber. For a 2000 kcal diet, the

    DASH diet provides 4700 mg potassium, 500 mg magnesium, 1240 mg calcium, 90 g

    protein, 30 g fiber, and 2400 mg sodium. The diet excludes or reduces the consumption

of high-fat dairy products, red meat, sodium, sweets, and high sugar beverages (Nelms, Sucher, Lacey, &Roth, 2011, p. 293 and 295).

3. ***Using the EAL, describe the association between sodium intake and blood pressure in hypertensive individuals.***

   According to the EAL, reducing dietary sodium does lower blood pressure. The EAL recognized seventeen studies support to support this conclusion. Blood pressure will decrease when intake of sodium is less than 2,300 mg a day. Blood pressure will even more likely lower if intake of sodium is lowered to 1,600 mg a day combined with the DASH diet (Academy of Nutrition and Dietetics, 2013)

4. ***What are the Therapeutic Lifestyle Changes? Outline the components of the nutrition therapy interventions.***

   The Therapeutic Lifestyle Changes composes of a diet and weight loss plan. The diet emphasizes low saturated fat and cholesterol and high amounts of fruits, vegetables, and grains (fiber). More specifically, the diet recommends an intake of saturated fat less than 7% of total calories, polyunsaturated fat up to 10% of total calories, monounsaturated fat up to 20% of total calories, total fat 25-35%, carbohydrates 50-60% of total calories, fiber 20-30g per day, protein 15% of total calories, cholesterol less than 200 mg/day, and total calories should be a balance of intake and output. The plan also includes recommendations for weight loss and ways to increase physical activity. The nutrition therapy intervention involves 4 steps: begin lifestyle therapies, evaluate LDL, evaluate LDL again, and monitor. In the first visit, the patient/client begins the lifestyle therapies which include the reduction of saturated fat and cholesterol in his/her diet and creates a goal. Also, the patient commits to increasing in moderate physical

activity. In the second visit, LDL is evaluated and if the goal is not achieved then must intensify the LDL lowering treatment which would include reinforcing the reduction in saturated fat and cholesterol, possibly adding plant stanols/sterols, and increase in fiber intake. In visit 3, again the LDL is evaluated. If LDL goal is still not achieved then a drug treatment may be considered. A treatment for metabolic syndrome should be addressed and emphasize on losing more weight and increasing physical activity. The next step or fourth visit, would be to monitor the adherence to TLC (lecture notes on Cardiovascular Disease and Nelms et al. 2011, p. 308-309).

5. ***Calculate Mr. Watkins' body mass index (BMI). What are the health implications of this number?***

   BMI = 102 kg/(1.778)^2

   = 32

   Mr. Watkin's BMI is 32. This would place Mr. Watkin's in the obesity class I (low-risk) category since his BMI is between 30-34.9. This means Mr. Watkin's has a low-risk of developing obesity related problems, but since he is obese, he has a greater risk of disease and death.

6. ***Calculate Mr. Watkins' total energy needs. Identify the formula/calculation method you used and explain your rationale for using it.***

   BMR = 10xweight + 6.25xheight- 5xage +5

   = (10 x 102) + (6.25 x 177.8) − (5 x 53) + 5

   = 1020 + 1111.25 − 265 + 5

   = 1871.25

   1871.25 x 1.2 = 2, 245.5

Mr. Watkin's total energy needs is 2,245 calories according to the Mifflin-St. Jeor equation and assuming he is sedentary. I used the Mifflin-St. Jeor calculation method because of its accuracy. It is more accurate than the Harris Benedict equation and unless an indirect calorimetric test can be done, this equation is the most accurate estimate of his needs.

7. *Using a computer dietary analysis program or food composition table, compare Mr. Watkins' "usual" dietary intake to his prescribed diet (DASH/TLC diet).*

NUTRIENT	PATIENT INTAKE	Prescribed diet	DISEASE IMPLICATIONS based on diet comparison	Your diet recommendations
kcal	2,963 kcal	2,245 kcal	Overeating leads to being overweight and obese which leads to many health problems: high blood pressure, heart disease, stroke, diabetes, and cancer.	I would recommend to decrease calorie intake by eating smaller portions and more nutrient dense foods.
% kcal Pro	14.5%	15%	No disease implications	Protein intake is good, but more lean protein sources is desired. Chicken and fish are good alternatives to beef and steak.
% kcal CHO	46.4%	55%	A low carbohydrate diet can lead to heart arrhythmias, cardiac contractile function impairment, kidney damage, and sudden death.	I would recommend that the patient increase his carbohydrate intake, but the carbs should come from complex carbohydrates such as starchy vegetables, legumes, whole grain bread, pasta, and rice. This is achievable by replacing white bread and pasta with whole

				wheat bread and wheat pasta.
% kcal Fat	40%	25-30%	A diet high in fat leads to high blood pressure, high cholesterol, and increases risk of cardiovascular diseases and cancer.	My recommendation would be to decrease overall fat intake by decreasing intake of saturated and trans fat. This is achievable by eating non-fat dairy products and less processed foods.
%SFA	18%	<7%	A diet high in saturated fat leads to higher cholesterol and higher blood pressure which leads to cardiovascular disease.	I would recommend to decrease saturated fat by eating less high fat dairy products and red meat. The patient should replace regular dairy products with skim or 1% milk and yogurt and lean meats such as chicken, turkey, and fish.
%MUFA	5.7%	20%	A diet low in monounsaturated fat decreases the potential benefit of monounsaturated fats. Benefits of monounsaturated fats include improving blood cholesterol by decreasing LDL, lowering blood pressure, improves lipid levels, stabilizes heart rhythms, and reduces cardiovascular disease risk.	My recommendation would be to increase intake of monounsaturated fats by increasing intake of olive oil, avocados, and nuts (almonds, pecans, peanuts).
%PUFA	1.9%	10%	A diet low in polyunsaturated fat decreases the potential benefits of these fats. Benefits of polyunsaturated fats include improving blood cholesterol by decreasing	I would recommend to increase intake of polyunsaturated fats by increasing intake of flaxseed oils, walnuts, and fish.

			LDL, lowering blood pressure, improves lipid levels, stabilizes heart rhythms, and reduces cardiovascular disease risk.	
Cholesterol	730 mg	<200 mg	High cholesterol leads to plaque formation and decreased blood flow to the heart resulting in cardiovascular diseases and heart attacks.	I would recommend decreasing cholesterol intake levels by decreasing high cholesterol foods such as high fat dairy products and fried foods. Also, increasing intake of monounsaturated fats will lower LDL.
Fiber	16.25 g	20-30 g	A low intake of fiber decreases the potential benefit of a high fiber diet. A diet high in fiber helps the digestive tract, lowers cholesterol, lowers blood pressure, and reduces the risk of cardiovascular disease and diabetes.	I would recommend to increase fiber intake by increasing intake of high fiber foods such as some fruits, vegetables, and whole grains.
Na	2,597 mg	2,400 mg	A diet high in sodium leads to dyslipidemia, hypertension, and increase risk of cardiovascular disease.	I would recommend to decrease sodium intake by eating more fresh products instead of canned or boxed products and fast food. And not adding salt to foods.
Ca	625.5 mg	1,240 mg	A diet low in calcium leads to osteoporosis, congestive heart failure, and increases risk of heart arrhythmias.	My recommendation would be to increase intake of calcium. A good source of calcium is low-fat dairy products.
K	2,557 mg	4,700 mg	A diet low in potassium increases risk of cardiovascular disease, obesity, and cancer.	My recommendation would be to increase intake of potassium by eating more bananas,

			Potassium helps to lower cholesterol and pump blood in the heart.	potatoes, spinach, and tomatoes.

(Nelms et al., 2011, Bilsborough & Crowe, 2003, and Harvard School of Public Health, 2013)

8. *From the information gathered within the intake domain, list possible nutrition problems using the diagnostic term.*

   Possible nutrition-related problems:

   1. Obese, Class I

   2. Inadequate carbohydrate intake

   3. Excessive fat intake

   4. Inadequate fiber intake

   5. Excessive sodium intake

   6. Inadequate calcium intake

   7. Inadequate potassium intake

9. *Dr. Clemmer ordered the following labs: fasting glucose, cholesterol, triglycerides, and creatinine. He also ordered an EKG. In the following table, outline the indication for these tests (tests provide information related to a disease or condition).*

Parameter	*Normal Value*	*Patient's Value*	*Reason for Abnormality*	*Your diet recommendations based on results*
Glucose	70-110 mg/dL	110 mg/dL (normal)	Within normal range, but at the high end; pancreas is just making enough insulin to keep blood glucose level normal	Decrease refined carbohydrate intake

Parameter	Normal Value	Patient's Value	Reason for Abnormality	Your diet recommendations based on results
BUN	8-18mg/dL	20 mg/dL (high)	Impaired kidney function most likely due to decreased blood flow to the kidneys	Decrease total fat intake
Creatinine	0.6-1.2 mg/dL	0.9 mg/dL (normal)	Within normal range	No recommendation
Total cholesterol	120-199 mg/dL	250 mg/dL(high)	High risk of developing heart disease	Low saturated fat, trans fat, and cholesterol diet
HDL- cholesterol	>45 mg/dL	30 mg/dL (low)	High risk for heart disease	Low saturated fat, trans fat, and cholesterol diet
LDL- cholesterol	<130 mg/dL	210 mg/dL (high)	Very high risk for heart disease	Low saturated fat, trans fat, and cholesterol diet
Apo A	94-178 mg/dL	75 mg/dL(low)	Impaired clearance of excess cholesterol from the body; high risk for heart disease	Low cholesterol
Apo B	63-133 mg/dL	140 mg/dL(high)	High fat diet or decreased clearing of LDL from the blood; increases risk for heart disease	Decrease total fat intake

Parameter	Normal Value	Patient's Value	Reason for Abnormality	Your diet recommendations based on results
Triglycerides	40-160 mg/dL	165 mg/dL(high)	Increased risk of developing heart disease (borderline high) due to high calorie diet or diet high in saturated/trans fat and cholesterol, being physically inactive, overweight or obese, cigarette smoking, increased alcohol consumption, Type 2 diabetes or kidney disease, hypothyroidism, or genetic factors	Low saturated fat Low trans fat Low cholesterol Decrease total fat intake

(American Association for Clinical Chemistry, 2013)

10. Calculate Mr. Watkins 10-Year Risk for a Heart Attack (using the pamphlet posted on Angel; Box 5)?

Calculation:

Age: 50-54 yrs. old = 6 points

Total Cholesterol: 250 mg/dL = 4 points

Smoker between age 50-59: yes = 3 points

Systolic blood pressure: 160 mmHg (untreated) = 4 points

Total points = 19 points = 10-year risk 8%

Mr. Watkins 10-year risk for a heart attack is 8% which means 8 people in that risk category will have a heart attack within 10 years.

(U.S. Department of Health and Human Services, 2005)

11. Indicate the pharmacological differences among the antihypertensive agents listed

below.

Medications	Mechanism of Action	Potential food-drug interactions
Diuretics	Decrease blood volume by increasing urinary output; inhibit renal sodium and water reabsorption	glucose – may develop an intolerance for glucose, potassium supplements may be necessary, and avoid natural licorice
Beta-blockers	Blocks beta receptors in heart to decrease heart rate and cardiac output	Calcium may interfere with absorption
Calcium-channel blockers	Affect the movement of calcium, cause blood vessels to relax; therefore, reduce vasoconstriction	Avoid natural licorice, limit caffeine, and avoid or limit alcohol
ACE inhibitors	Vasodilators that reduce BP by decreasing peripheral vascular resistance by interfering with the production of angiotensin II from angiotensin I and inhibiting degradation of bradykinin	Avoid natural licorice and avoid salt substitutes
Angiotensin II receptor blockers	Interferes with renin-angiotensin system without inhibiting degradation of bradykinin	May increase serum potassium; avoid salt substitutes
Alpha-adrenergic blockers	Blocks the vascular muscle response to sympathetic stimulation; reduces stroke volume	Avoid natural licorice

 (Nelms, et. al, 2013, p. 291)

12. **What are the most common nutritional implications of taking hydrochlorothiazide?**

Hydrocholorothiazides inhibits reabsorption of sodium, chloride, and potassium in the

kidney. It also is a diuretic so it decreases blood volume by increasing urinary output.

The most common nutritional implications of taking hydrochlorothiazide is not having

enough potassium in the blood and dehydration. Due to the lack of reabsorption of

potassium, an increase in potassium intake and/or potassium supplements may be

necessary. Since urinary output is increased, dehydration may occur (Nelms, 2011, p. 291 and *Hydrocholorothiazide*, 2013)

13. ***Mr. Watkins' physician has decided to prescribe an HMGCoA reductase inhibitor (Zocor). What is its mechanism of action and what changes can be expected in his lipid profile as a result of taking this medication?***

The mechanism of action of HMGCoA reductase inhibitor (Zocor) which is a simvastatin is to lower LDL cholesterol, raise HDL cholesterol, and lower triglyceride levels to decrease the patient's risk of heart failure. Zocor does this by slowing the production of cholesterol in the body. If less cholesterol is produced in the body then the amount of cholesterol that may build up on the walls of the arteries decreases. This helps to prevent blockage of blood flow which results in heart failure. After taking this medication, it should be expected in Mr. Watkin's lipid profile to see his LDL levels decrease 18-55%, his HDL levels to increase 5-15%, and his triglyceride levels to decrease 7-30% (Nelms et. al, 2013, p. 307 table 13.11 and *Simvastin*, 2013)

14. ***What are some possible barriers to compliance?***

Some possible barriers to compliance are inadequate health literacy, financial constraints, cultural differences, religious beliefs, emotional concerns, family dynamics, lack of motivation, inadequate teaching time, poor communication, and logistics. Possible barriers Mr. Watkins would most likely face are emotional concerns, family dynamics, and lack of motivation. Mr. Watkins may be too overwhelmed by his diagnoses to understand that he must change his lifestyle. Since Mr. Watkins has a brother who has CAD and surgery, he may not want to go through what he did. Also, changing his

lifestyle will be difficult if he doesn't have the support from his wife or son. He may have a lack of motivation to exercise if he never has before.

15. ***Select two KEY nutrition problems and complete the PES statement for each.***

    1. Obese, Class I related to excessive energy intake and physical inactivity as evidenced by weight of 225 lbs., BMI of 32, overconsumption of high-fat foods, and infrequent physical activity.

    2. Excessive fat intake related to food and nutrition related knowledge deficit concerning appropriate amount of dietary fat as evidenced by high (total) cholesterol of 250 mg/dL, low HDL of 30 mg/dL, high LDL of 210 mg/dL, high triglycerides of 165 mg/dL, and frequent consumption of high-risk lipids and high-fat foods.

16. ***When you ask Mr. Watkins how much weight he would like to lose, he tells you he would like to weigh 170, which is what he weighed most of his adult life. Is this reasonable? What would you suggest as a goal for weight loss for Mr. Watkins?***
    Losing 55 lbs. is not a reasonable goal for Mr. Watkins if he wants to lose the fat naturally. To lose this much weight by only losing 1-2 lbs. per week would take a very long time. A more realistic goal for Mr. Watkins is to weigh 202.5 lbs. in 6 months. This means he would lose 10% of his body weight in 6 months at a rate of 1-2 lbs. per week. If he is successful, then he could set another goal to lose 10% more of his body weight in another 6 months.

17. *How quickly should Mr. Watkins lose this weight?*

He should only lose 1-2 lbs. a week or no more than 1% of his body weight a week. This is because we want him to lose weight safely. Since he is obese, he may be able to lose more weight, but losing 1-2 lbs. a week is generally a good benchmark and a goal most people can do.

18. *Write Nutrition Prescription for patient. Include Diet type, kcal level, % kcal from CHO, PRO, FAT, Saturated fat, cholesterol, Na.*

Nutrition Prescription*:* 2,245 kcal heart healthy diet (DASH/TLC) including 50-60% CHO of total calories, 15% protein of total calories, 25-35% total fat of total calories, less than 7% saturated fat of total calories, less than 200 mg/day cholesterol, and less than 2,300 mg/day of sodium.

19. *For each of the PES statements that you have written, establish an ideal goal (based on the signs and symptoms) and an appropriate intervention (based on the etiology). Use IDNT manual to label Intervention domains and subclasses; and give details of exactly what you are going to do.*

PES #1

Goal: To lose 22.5 lbs. or 10% of patient's body weight within 6 months by decreasing total calories to 2, 245 kcal and consumption of high-fat foods to 25-35% and engaging in low-moderate exercise 3-5 days per week.

Intervention:

Nutrition Education: Educate patient on how to keep track of his total calories and ways he can exercise. Show him how to use mytracker or another smartphone app to keep track

of his total calories for the day. Give him ideas of where and what he could do for exercise: walk at lunchtime, bike, hike trails, etc.

Nutrition Counseling: Aid client in goal setting to lose weight by exercising 3-5 days a week and decreasing total and fat intake. Help facilitate social support network with wife and son. Guide him to think of what he could and would want to do to lose weight. Include his family in exercising daily as a support system.

PES #2

Goal: To lower total cholesterol by intake of less than 200 mg a day, decrease LDL to 160 or less, raise HDL to 45 or more, lower triglycerides, and decrease consumption of saturated/trans fats to less than 7% of calories and total fat to 25-35% of total calories.

Intervention:

Nutrition Education: Educate the patient on the proper amount of total fats for his needs. Also, educate the patient on eating low-fat foods or more foods with monounsaturated and polyunsaturated fats. Give him examples of foods he should eat less of and what foods he should eat more of such as nuts and fish.

Nutrition Counseling: Assist the patient in goal setting to make dietary changes including more grains, vegetables, fruits, low-fat dairy products, nuts and less fats and sweets. Help guide and facilitate his social support system by including his wife in the counseling sessions.

20. *Write a concise ADIME note by pulling the key components from your answers.*
    Hand-in a double spaced typed version only.

A: Mr. Watkins is a 53 y.o., African American male admitted to the hospital for a complete cardiovascular evaluation after getting turned down for life insurance. He has

been diagnosed with grade I hypertensive retinopathy, hypertensive heart disease, and early COPD. Ht: 70", Wt: 225 lbs., BMI = 32, BP = 160/100. For Mr. Watkins height and age, he is considered obese. His BMI of 32 is in the obesity class I (low-risk) category. The patient is at low-risk of developing heart disease. He has hypertension. PMHx: mild obesity for past 10 years, mild hypertension, no diabetes by history, abnormal lipid profile. Social hx: tobacco 1 ppd for 30 years, alcohol 2 cans of beer per week. Family hx: CAD in 48 brother who had coronary artery surgery. According to the diet history from his usual dietary intake recall, the patient has a daily intake of 2,963 kcal and a high-intake of fatty foods with high saturated. He eats bacon, butter, potato chips, a cheeseburger, and steak almost every day. Total fat: 40% of total kcal, 10% higher than recommendation of 25-35%. Saturated fat: 18% of total kcal, 6% above recommendation. Patient states he has a good appetite and is not very active. Labs: BUN 20, Bilibrubin 1.1, C-reactive protein 1.0, cholesterol (total) 250, HDL 30, LDL 210, Triglycerides 7.0, Apo A 75, Apo B 140.

D: 1. Obese, Class I related to excessive energy intake and physical inactivity as evidenced by weight of 225 lbs., BMI of 32, overconsumption of high-fat foods, and infrequent physical activity.

2. Excessive fat intake related to food and nutrition related knowledge deficit concerning appropriate amount of dietary fat as evidenced by high (total) cholesterol of 250 mg/dL, low HDL of 30 mg/dL, high LDL of 210 mg/dL, high triglycerides of 165 mg/dL, and frequent consumption of high-risk lipids and high-fat foods.

I: **Nutrition Prescription:** 2,245 kcal heart healthy diet (DASH/TLC) including 50-60% CHO of total calories, 15% protein of total calories, 25-35% total fat of total calories, less

than 7% saturated fat of total calories, less than 200 mg/day cholesterol, and less than 2,300 mg/day of sodium.

Goal #1: To lose 22.5 lbs. or 10% of patient's body weight within 6 months by decreasing total calories to 2, 245 kcal and consumption of high-fat foods to 25-35% of total calories and engaging in low-moderate exercise 3-5 days per week.

Intervention #1:

Nutrition Education: Educate patient on how to keep track of his total calories and ways he can exercise. Show him how to use mytracker or another smartphone app to keep track of his total calories for the day. Give him ideas of where and what he could do for exercise: walk at lunchtime, bike, hike trails, etc.

Nutrition Counseling: Aid client in goal setting to lose weight by exercising 3-5 days a week and decreasing total and fat intake. Help facilitate social support network with wife and son. Guide him to think of what he could and would want to do to lose weight. Include his family in exercising daily as a support system.

Goal #2: To lower total cholesterol by intake of less than 200 mg a day, decrease LDL to 160 or less, raise HDL to 45 or more, lower triglycerides, and decrease consumption of saturated/trans fats to less than 7% of calories and total fat to 25-35% of total calories.

Intervention #2:

Nutrition Education: Educate the patient on the proper amount of total fats for his needs. Also, educate the patient on eating low-fat foods or more foods with monounsaturated and polyunsaturated fats. Give him examples of foods he should eat less of and what foods he should eat more of such as nuts and fish.

Nutrition Counseling: Assist the patient in goal setting to make dietary changes including more grains, vegetables, fruits, low-fat dairy products, nuts and less fats and sweets. Help guide and facilitate his social support system by including his wife in the counseling sessions.

M/E: Patient understands weight loss goal to lose 22.5 lbs. in 6 months by decreasing total caloric intake to 2, 245 calories, total fat intake to 25-35% of total calories, and exercising at least 3-5 days a week. Will take measurement of weight in 2 weeks and assess if calorie goal and total fat intake is meeting the patient's goal. Based on the patient's usual dietary intake, patient consumes approximately 730 mg/day cholesterol, 40% of calories from fat, and 18% of saturated fat. Patient goal is to reduce cholesterol intake to less than 200 mg a day, total fat intake to 25-30% of calories, and saturated intake to less than 7%. Will monitor cholesterol, total fat, saturated fat, and total calorie intake in 2 weeks. In 2 weeks, will monitor dietary and exercise habits by a daily journal. Will assess if patient is following new lifestyle changes. Will then assess new labs for expected outcomes. Expect to have lost at least 4 lbs. and see labs closer to normal.

Kayla Slater, MS, RD   10/14/13

Part II

1. ***Mr. Watkins had a myocardial infarction. Explain what happened to his heart.***

   Mr. Watkin's heart could not receive oxygen due to an atherosclerotic plaque restricting blood flow. In a myocardial infarction necrosis of the myocardial cells occur as a result of the oxygen deprivation. The myocardial cells are dying because they are not receiving oxygen. Blood flow is comprised causing oxygen not to get to the cells because his

coronary arteries are occluded to the point that blood flow to portions distal to the blockage can't receive oxygen. Since his heart is not receiving oxygen, he felt pain in his heart aka angina (Nelms et al., 2013, p. 284, 298, 315).

2. ***Mr. Watkins was treated with an angioplasty and stent placement. Explain this medical procedure and its purpose.***

Angioplasty and stent placement is a procedure to open the blocked coronary arteries that supply blood to the heart. The procedure begins with receiving pain and blood thinning medications. Then a flexible tube (catheter) is inserted through a surgical cut in the artery. An x-ray pictures are used to guide the catheter in the heart and arteries. A dye is added to highlight blood flow in the arteries in order to see any blockages in the blood vessels. Next a guide wire and balloon catheter is pushed into the blockage opening up the blocked vessel. Then a mental mesh stent is placed in the blockage to prevent the artery from closing up again. The purpose of this procedure is to open up the blockage so oxygen can get to the heart, so the patient does not have another heart attack or cardiac death due to the blockage (*Agioplasty and stent placement – heart*, 2012).

3. ***What are the current recommendations for nutritional intake during a hospitalization following a myocardial infarction?***

Currently, the recommendation for nutritional intake during a hospitalization following a myocardial infarction is a clear liquid diet without caffeine. Since it will be difficult for the patient to eat because of pain, anxiety, fatigue, and shortness of breath, a clear liquid diet is prescribed after the procedure. Also, a clear liquid diet with no caffeine will help to prevent arrhythmias and decrease risk of vomiting. Within a short time, the patient

should progress from a clear liquid diet to a full liquid diet then to a soft diet of easily

chewed foods with smaller, more frequent meals.

4. ***Examine the chemistry results for Mr. Watkins. Which labs are diagnostic of the MI***

   diagnosis? Explain.

   The labs that are diagnostic of the MI diagnosis include CPK-MB, lactate dehydrogenase,

   troponin I, and troponin T. These proteins/enzymes are at elevated levels in Mr. Watkins

   blood. These enzymes/proteins are released during necrosis and if found in high amounts

   in the blood within the myocardial cells, a myocardial injury has occurred (Nelms et al.,

   2011, p. 319).

5. ***Mr. Watkins was prescribed the following medications on discharge. What are the
   food-medication interactions for this list of medications?***

Medication	Possible Food-Medication Interactions
Lopressor 50 mg daily	Should be taken with a meal or right after a meal, so will decrease the risk of blood pressure decreasing too much
Lisinopril 10 mg daily	Potassium – should avoid eating high amounts of potassium since the medication increases the amount of potassium in the body, too much potassium can be harmful causing irregular heartbeats

Foods: bananas, oranges, green leafy vegetables, and salt substitutes that contain potassium |
| Nitro-Bid 9.0 mg twice daily (nitroglycerin topical) | Avoid alcohol – drinking alcohol while on this medication can cause dangerously low blood pressure because the alcohol can affect the blood-vessel relaxing effect on nitrates. |
| NTG 0.4 mg sl prn chest pain (nitroglycerin) | Avoid alcohol –drinking alcohol while on this medication can cause dangerously low blood pressure because the alcohol can affect the blood-vessel relaxing effect on nitrates. |
| ASA 81 mg daily (aspirin) | May create stomach upset, so can be taken with food or milk to decrease stomach upset.

Avoid drinking 3 or more alcoholic drinks a day. Alcohol increases chance of stomach bleeding. |

(National Consumers League and U.S. Food and Drug Administration)

6. ***You talk with Mr. Watkins and his wife, a teacher at the local high school. They are friendly and seem cooperative. They are both anxious to learn what they can do to prevent another heart attack. What questions will you ask them to assess how to best help them?***

Some questions I might ask them are if Mrs. Watkins does most of the cooking, what she normally cooks for dinner? Do you cook what he likes or what is most convenient? If she says that she cooks what he likes, I could explain that eating more lean protein such as fish or chicken would help to lower his blood pressure. Also, I may ask them if they have a dog or what outdoor activities they like. If they do have a dog, I could suggest they both go for a walk after dinner with the dog. I may also ask them what would be most helpful in changing to a new diet. What could I do to better help you buy and fix healthier foods that will help to lower his cholesterol and blood pressure?

7. ***What is the rationale for the use of plant stanols/sterols and list some products that you may recommend?***

The use of plant stanols/sterols reduce cholesterol absorption by up to 65%. Plant stanols/sterols can lower LDL by 9-20% and the effect is additive to statins. Also, since Mr. Watkins is older, plant stanols/sterols may work better for him. Some products I would recommend are margarine, orange juice, low-fat yogurt, breads, cereals, fruit, and nuts (lecture notes on Cardiovascular Disease).

8. *Mr. Watkins and his wife ask about supplements. "My roommate here in the hospital told me I should be taking fish oil pills." What does the EAL say about fish oil supplementation for this patient?*

Even though, Mr. Watkins is on statin medications, taking fish old supplementation may be beneficial. According to the EAL, two out of three studies showed a benefit of taking fish oil pills on triglycerides. There was a 32-35% reduction of triglycerides in taking fish oil pills in the two studies. But in both studies, the patients also had diet and lifestyle changes (Academy of Nutrition and Dietetics, 2013).

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