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## Assignment 10.2: Shadow Health-Focused Exam: Hypertension and Type 2 Diabetes

**Patient:** Arun Patel

**DOB:** 10/06/1981

**Height:** 5'9

**Weight:** 233lbs

**Allergy:** **NKDA**

**Diagnosis:** **Hypertension (Diagnosed 1 year ago) & Diabetes Mellitus Type 2 (Diagnosed 5 years ago)**

**Scenario:** Arun Patel is a 38-year-old Indian American male who came to the clinic today for a follow-up appointment in regards to his treatment for hypertension and diabetes type 2.

**Home medications:**

- **Hydrochlorothiazide 50mg PO daily (Started 1 year ago)**
- **Metformin 850mg PO 3x day with meals (Started 5 years ago)**
- **Escitalopram 20mg PO daily (Started 13 years ago)**

**Vitals:** Temp 37C (Temporal), Blood pressure 146/94 (Automatic), Heart rate 75 (NSR), O2 sat 98% (room air), Respiratory rate 23.

**Assessment:** Mr. Patel came to the clinic for a follow-up appointment for the treatment of his hypertension and type 2 diabetes. He states he has been growing more worried and anxious about life. He is currently a student and teaches film at the local university which is his main source of income. He does have limited funds although he does have health insurance through his employer and can afford prescription medications at a reasonable to inexpensive cost. The patient states he was diagnosed with generalized anxiety disorder 13 years ago and has been on Escitalopram ever since. He denies any depressive symptoms but does have panic attacks on

occasion which can be exacerbated by conflict with his family. The patient states he has no chest pain, shortness of breath or headaches but has been increasingly thirstier and urinating more frequently due to diuretic use. He denies any swelling/edema at this time. Mr. Patel admits to following an unhealthy diet including fast food, fried foods, and sugar. He also denies adding any extra salt to his food but does state his food is generally "very salty" most likely due to cultural dietary preferences. The patient states he has gained approximately 15lbs. since last visit and does not exercise due to time constraints and lack of motivation. The girlfriend is a good support system and he states he breaths slow when he becomes anxious and/or has panic attacks. Denies any substance use. Smoked cannabis in undergraduate school but denies current use. Denies any tobacco use. Denies any alcohol use. Mr. Patel is currently maxed out on Metformin at 2550mg a day showing no appropriate blood glucose control. He has also maxed out Hydrochlorothiazide at 50mg a day with ineffective blood pressure control. The medical diagnosis and recommendations are supported by the following data presented by the patient at clinic simulation today:

### **Lab Values & BP Trends:**

#### Last visit (6 months ago)

- Blood glucose – 142 (Fasting)
- A1C – 7.5%

#### Lab visit (1week prior)

- Blood glucose – 210 (Fasting)
- A1C – 9.3%

#### Home glucose monitoring

- 4 weeks ago – 218 (Random)

- 2 weeks ago – 220 (Random)

Home blood pressure monitoring

- 4 weeks ago – 142/96
- 2 weeks ago – 144/92

**Family History:**

- Father - HTN (Takes medication)
- Mother - DM, High cholesterol (Takes medication but no insulin)

**Prescriptions:**

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10/28/2019

Patient: Arun Patel

DOB: 10/06/1981

Allergy: NKDA

Glipizide/Metformin 2.5mg/500mg 1 (one) tablet twice daily by mouth for 30 (thirty) days.

Dispense 1 (one) bottle, 60 (sixty) tablets; 2 (two) refills. Please dispense as written, take it with food.

Indication: Type 2 Diabetes Mellitus

Lisinopril/Hydrochlorothiazide 10mg/12.5mg 1 (one) tablet by mouth daily for 30 (thirty) days.

Dispense 1 (one) bottle, 30 (thirty) tablets; 2 (two) refills. Please dispense as written.

Indication: Hypertension

**Patient education:** Mr. Patel was given two prescriptions to help manage his diabetes and hypertension to take as directed for thirty days. He was also instructed to learn about healthy

food options as well as physical activity that will promote heart health and stable blood sugar control. He was also connected to a social worker to help with physical activity services around the community that are inexpensive and financially affordable. Mr. Patel was instructed to make lifestyle modifications to promote cardiovascular health and avoid irreversible damage to his heart, vasculature and endocrine system. Compliance with non-pharmacological therapies such as lifestyle modifications is important, and the patient was also instructed to seek therapy services in conjunction with his SSRI to help mediate the anxiety symptoms better. He also was educated on the common side effects of the new medications including sulfa allergies, severe hypoglycemia symptoms and what to do in case of emergency. Mr. Patel was educated on hematologic symptoms caused by sulfonylureas and instructed to report immediately if he notices bleeding uncontrolled by pressure, coughing up blood, symptoms of anemia and other hematologic disorders or any bloody/tarry black stools or bloody/coffee ground emesis. The patient verbalized understanding of instructions and appears confident and capable to follow as prescribed.

### **Learning outcome**

#### **1) What did you learn?**

Learning about the drugs I work with daily on a deeper level has helped me understand better why they are prescribed as I have been able to associate some of the drugs with real-life patients. Learning about the hypertensive drugs on the shadow health hypertensive module and then applying the knowledge on the clinical setting module was very interesting yet a little intimidating. Mr. Patel was not a very easy and straight forward patient and I knew I did not want to take him off his current regimen but wanted to add to it. Learning about how to pair the antihypertensive and antidiabetic drugs was a good reminder that sometimes as practitioners, we

have to consider the patient's economic status. I kept looking at the price of drugs online and everything seemed expensive but I also kept in mind that the patient has health insurance and Lisinopril is inexpensive. I avoided sulfonylureas because of their side effects, especially of hematologic nature but in the end, they turned out to be the most affordable when paired with metformin. It was a good learning lesson in terms of not only pairing antihypertensives and antidiabetic drugs but also on considering the patient and simply, real life. I have enjoyed shadow health so far as it has been a great asset in my learning process.

2) How did the assignment help you learn to prescribe medications for hypertension?

I began the clinical assignment confident that I was going to excel as I am a cardiac nurse but as I got to the end I realized it had been a very humbling experience. Managing a cardiac patient in the acute setting gives providers a feeling of confidence as they get instantly gratified by immediate positive results from their interventions. That changes significantly when managing chronic disease in the outpatient setting. I was fairly on point with selecting the ACE inhibitor as I knew that is usually the first choice so adding it to hydrochlorothiazide was an appropriate option. The antidiabetics, on the other hand, were much harder to select as I was unable to select the most cost-effective for the patient. The humbling part was for not considering the patient when selecting my antidiabetics. At first, I wanted to switch him completely but I remembered from my readings that Metformin has cardiac protective properties so adding another agent was the correct route. In my first two attempts, I selected Januvia/Metformin followed by Actos/Metformin. The reason why I chose Januvia/Metformin as my first choice was because Metformin and "gliptins" are the most appropriate for diabetic patients with high cholesterol. Although there was no data on Mr. Patel's lipid values, due to his mother's history of hypercholesterolemia, Januvia/Metformin combo is an appropriate choice, just not for this

scenario. In the end, Glipizide was the most appropriate one to pair with metformin for this patient due to his socio-economic status.

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