Hypertension Case Study
MSN

C.S. is a 4o-year-old male who attends a community health screening. He states that he has not seen a health care provider in a "really long time." He is a truck driver who eats mainly fast food while on the road. He smokes a pack of cigarettes a day "just for something to do during the long hours of driving and to keep me calm." C.S. is 5 ft., 9 in tall and weighs 230 lb. His BP is 182/104, heart rate 90, respirations 24, and temperature 97.0°F.

1. What risks factors for hypertension does C.S. have?

C.S.'s risk factors include, not seeing a provider in a long time, being a male, driving a truck as a profession (sedentary lifestyle), diet of mostly fast food on the road, smoking a pack of cigarettes a day, possibly anxiety or stress (he states he smokes cigarettes to keep him clam), and weight of 230 pounds making his BMI 34. Obesity is classified as being above 30 as a BMI, so this puts C.S. at an obese status. (I did not include his age as 50 or higher is more of a risk for HTN).

2. What clinical manifestations of hypertension would you assess for in C.S.?

I would be checking his other organs including his kidney and liver function for sure. Signs of fatigue, dizziness, palpations, angina, and dyspnea are also symptoms I would look for. Not to mention, I would also look for any other organ damage related to blood vessel damage.

3. What complications will you assess C.S. for?

Complications I would look for are coronary artery disease, left ventricular hypertrophy, heart failure, cerebral vascular disease, peripheral vascular disease, nephrosclerosis, and retinal damage. All of these are possibilities. He has not seen a health care provider for a long time, according to him, so I would make sure everything is okay. Huge concern of mine is the effect his diet has on his arteries, they can be stiffened, plaqued, etc.

C.S. is referred to his health care provider to follow up on his high blood pressure screening.

4. What diagnostic studies might you expect the health care provider to order for C.S.?

I would expect lab work to be ordered for him. So, blood draws would be used to see any causes, maybe dysfunctions of other organs (organ disease) or any causes of secondary hypertension like organ damage. Lab draws can also determine overall cardiovascular risk along with establishing his baseline so we know what treatment would work. Besides labs, we would also want to measure blood pressure, urinalysis, BUN/serum creatinine, creatinine clearance, serum electrolyte/glucose, serum lipid profile, uric acid levels, ECG, and echocardiogram. Most of the tests I mentioned help with primary HTN. Finally, to get a truly accurate idea on the patient's status, ambulatory blood pressure monitoring (ABMP) is a noninvasive, fully automated system that measures BP at preset intervals over a 12-24 hour period.

C.S.'s BP is monitored for several visits and remains elevated. His serum cholesterol, BUN, and creatinine levels are elevated. His creatinine clearance (glomerular filtration rate) is below normal, demonstrating renal insufficiency.

5. What type of lifestyle modifications would you recommend for C.S. to control his BP?

Number one, weight loss is going to be the most important thing we can try with him. He is obese and even losing one kilogram, we can take BP down by 1 mmHg, imagine losing 10 kg, that's 10 mmHg down. Making diet changes would also help him. Being on the road may make it challenging for him, just like losing weight being a truck driver and sitting for hours. Maybe encouraging 30 minute breaks

when he can and walking around a park or doing some yoga or such. To diet, I would recommend a plant-based or Mediterranean diet. Personally, the DASH diet would probably be better for him. It includes more options from fruits/veggies, fat-free or low-fat milk products, whole grains, fish, poultry, beans, seeds, and nuts. This gives more options for snacks and meals. Dietary sodium reduction would also be something to consider. Cutting back on tobacco use is essential. Nicotine increases vasoconstriction which is already happening with HTN. Promoting all the physical activity he can get is essential. Moderating his alcohol consumption (if any), and helping any stress he may have is something to consider too.