Assessing Blood Pressure: How Accurate Are the Blood Pressure Measurements You Use to Care for Your Patients? - Frankly Speaking EP 76

Transcript Details

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Dr. Frank Domino:

Mark is a 53-year-old patient of yours and he's here for follow up of his hypertension. He was diagnosed last year and after a trial of diet and exercise changes, his blood pressure remained above goal. You started him on Lisinopril 10 milligrams a day. Three months ago you noted his pressure was still above goal and added Hydrochlorothiazide 12.5. Mark's blood pressure today is a 145 over 82. When you discuss it with Mark, he asks, "My blood pressure is always high at this office. When it's taken at work by the nurse, it's always much better. I'm taking these medicines as prescribed and I exercise just like you recommended. What's wrong?" You note Mark is sitting on the exam table and that the only visible cuff in the room is the standard adult cuff size. Mark is six feet two inches tall and weights 240 pounds.

Hi, this is Frank Domino, Professor in the Department of Family Medicine and Community Health at the University of Massachusetts Medical School and joining me on today's episode is Dr. Susan Feeney, Family Nurse Practitioner and Assistant Professor and Program Coordinator of the Family Nurse Practitioner Tract at the University of Massachusetts

Medical School, Graduate School of Nursing. Hi Susan.

Susan Feeney:

Hi, Frank.

Dr. Domino:

So, Mark's a pretty common patient in my practice, and he's sitting there on the table. How do we go about determining what's an accurate blood pressure for him?

Susan Feeney:

Well, it's very interesting. The guidelines for the last, I think the JNC 7 and the JNC 8 and now, the recent AHA/ACC guidelines are very explicit about proper method of obtaining blood pressure. And when you think about what all the aspects are, and it's really to bring someone's... Take away extraneous reasons for their heart rate to be up, I think most of us aren't meeting the mark.

Number one, you have to make sure that the patient is relaxed and properly prepared. So they're supposed to be seated for five minutes, they're supposed to not have had any caffeine or had any cigarettes for 30 minutes before. You're supposed to not talk to them, and they're not supposed to talk to you, while you're obtaining the blood pressure. They're supposed to be seated in a chair with their feet flat and their back supported, because if they are trying to held themselves up on a table that increases tension and increases blood pressure.

You should make sure that your equipment is proper, that it's been calibrated, and they've looked at studies and found that a very high percentage of offices haven't even looked at the their blood pressure monitors to see if they've been calibrated recently. The cuff is

supposed to be the proper size. We all know that it's supposed to go around, it shouldn't be too tight or too small. The arm should be positioned at heart level and should be relaxed. And more importantly, there should be a minimum of two pressures taken. So you take an initial, and what the guidelines say is if it is higher than, it says 140 over 90, but if it is elevated then you take a second one within one to two minutes, so I can tell you, that doesn't happen very often.

Dr. Domino:

Yeah, so to take a second reading is very important there.

Susan Feeney:

Absolutely, the one thing that I can see throughout all the studies that I looked at is that we should not be basing diagnosis or efficacy of treatment on one measurement. That we should be getting at least two in the office and there's some suggestion of three. The SPRINT trial actually did three blood pressures. And that we should be averaging them according to the AHA guidelines. And that we should be thinking about home pressure monitoring as well, that the more measurement the more valid that the measurement is.

Dr. Domino:

So let's talk a little bit about about that. So in my office as well, getting patients to sit in a chair with their feet on the floor and their back support and the proper size cuff is not happening yet, but we're planning on trying to make that transition. Home blood pressure monitoring has really become very important. Can you talk about how you complete that with a patient?

Susan Feeney:

Well, you would really go over all of the same things that I just mentioned. They should be

sitting comfortably, they don't want them sloping on a couch, but they want them in a chair that has back support, that their arm is supported, that the cuff is appropriately applied to their arm. It's an automated cuff, is what is preferred because there's less room for error than in auscultatory. And that's true also in an office. So all of the points that I just mentioned, that has to be supported and given to the patients.

So basically saying to the patient, "Here's your cuff," even if you have one in the office, sending them home, it's not an appropriate amount of training. You really have to spend the time going over how they should apply it, that they should get... They can do a single reading or they can do two, one to two minutes apart, but they should check it in the morning when they get up and just before they go to bed. The AHA actually has some videos online that you can send, give the patient if they have access to the internet. The problem is just getting the cuff and getting them an accurate cuff. So, generally what we do in my practice, and what is recommended here is you have them bring the cuff in and you show them how to apply it, you show them how to take it and you calibrate it with your hopefully recently calibrated blood pressure monitoring in your office.

Dr. Domino:

I love that and I've actually really enjoyed patients checking their pressures at home and sending me information via the portal. It goes right in their chart and I feel very comfortable looking at those numbers and say, "All right, that's a much more accurate reading than what's happening here when they're a little bit nervous or the room is too cold or whatever and feel very comfortable." Let's talk a little bit, now that we've been able to accurately take a blood pressure, about what the current treatment diagnostic guidelines are and how to apply that in your practice.

Susan Feeney:

It's really rather confusing right now. The JNC 8 came out I want to say two years ago now, maybe three and they had actually loosened the requirements a little bit or the diagnostic criteria, and raised it up 'cause they felt that when they looked at the evidence, there wasn't a lot of benefit to bringing people's blood pressure down to such low levels. SPRINT trial came out, as you remember, and it was looking at older folks and found... They found that they had compelling evidence that they should bring the values back down. So the AHA and the ACC came out with joint guidelines that made the blood pressure diagnostic criteria a little more stringent.

They have several categories; there's elevated blood pressure, which is systolic is 120-129 and diastolic less than 80 is considered elevated. Stage one is 130-139 systolic, or diastolic at 80-89. And stage two is a systolic pressure equal to or greater than 140, and a diastolic equal to or greater than 90. They basically say if you have elevated hyper... If you have elevated blood pressure, not hypertension, so that's in the 120-130, that we should be really instituting lifestyle changes, and it's diet, exercise, and we all know those guidelines very well.

For the folks who are in stage one, they don't recommend treatment, they recommend lifestyle modifications across the board and treatment only if they have a cardiovascular risk that's greater than 10% over the next 10 years. So that means that we need to be calculating that for our patients. So they're really saying don't institute treatment with medication until you understand what their risk factors are. And then if people have the stage two, they do think that you start lifestyle modification but you also... You start medication at that point. And along those lines, I read an editorial by Bell et al, and what they extrapolated is, based on these new guidelines that there could be as many as 31 million more people diagnosed with hypertension and that based on that stage two

hypertension diagnosis that there could be up to 4.2 million people who would need treatment immediately. That's astonishing and when you think that we're basing diagnosis and treatment on at impossibly inaccurate values, it really is something we need to take very seriously.

Dr. Domino:

Well I like the consistent way to approach obtaining blood pressure measurements, both in the office and at home. And I think there's so much confusion about the stages of hypertension; the 140 over 90 seems to apply to most people in primary care. The lesser, the stage one where it's less than 139 and less than 90 certainly seems to be something that necessitates we don't just take for granted. We calculate the risk and we institute lifestyle changes. Any thoughts in particular besides diet and exercise with regard to lifestyle changes?

Susan Feeney:

Well, people often will take medications over the counter, such as NSAIDs. We know that NSAIDs can cause hypertension, and we often don't ask about those things when they come in. So if somebody has an issue with hypertension or not getting it under control, we really have to be really careful about assessing that. And then not just about their diet and exercise, how much alcohol are they drinking? We know that there is a correlation between moderate to heavy drinking and increased blood pressure. So sometimes we are seeing an end result but not mitigating what might be a secondary cause. And then you always want to rule out secondary causes; is there a Hypothyroidism? Is there some other issue going on?

Dr. Domino:

Susan, I think this is fantastic. A great deal of confusion about both how to obtain blood

pressure and the new guidelines you've been able to summarize them here today. There's quite a bit more on diagnosis and management of hypertension at PriMed.com. Thank you for joining me today.

Susan Feeney:

Thank you.

Dr. Domino:

Practice pointer: Approach diagnosis and management of hypertension on appropriately measured blood pressure. That is, patients sitting with their feet supported on the floor, their back supported in a chair without speaking for five minutes and use a well-calibrated cuff both in your office and at home. Join us next time when we talk about post-operative pain analgesia and safe use of medications. And visit us at PriMed.com to stay current on many primary care topics.