THE FREE CLINIC RESEARCH COLLECTIVE

Hypertensive Crisis: Moving Towards Holistic Patient Care

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Abstract

Introduction: Hypertension is well-known to be a "silent killer" and plays a significant role in the onset and progression of many diseases including heart failure, diabetes, cerebrovascular disease, and renal failure. Hypertensive crisis, in particular, is defined as a blood pressure greater than 180/120 and can lead to extensive end-organ damage[7]. In this study, our aim was to determine how extensive the issue of uncontrolled hypertension is for our patients being seen at specialty clinics.

Methods: A retrospective chart review was conducted on specialty clinic visits at HOPES between August 1, 2015 and July 31, 2016. All patients with (a) two or more instances of uncontrolled hypertension (as defined by the JNC8 guidelines[9]) or (b) hypertensive urgency were recorded. We then reviewed the charts of these patients to determine whether they were being followed at HOPES Primary Care clinic for their hypertension.

Results: Out of 153 patients seen at HOPES specialty clinics during the above time period, seven patients were found to have two or more instances of uncontrolled hypertension and 18 additional patients were found to have instances of hypertensive urgency. Of these 25 patients, six (24.0%) were not concurrently followed at Primary Care clinic.

Conclusion: The results of our chart review demonstrated that nearly one in four patients at HOPES with uncontrolled hypertension or an instance of hypertensive urgency were not concurrently being followed at HOPES Primary Care clinic for their hypertension. By assessing how extensive the issue of untreated uncontrolled hypertension is at our clinic, our staff can better allocate resources to our Primary Care clinic in order to schedule appointments for our hypertensive patients so that they may be cared for in a holistic manner.

Introduction

Hypertension is well-known to be a "silent killer" and plays a significant role in the onset and progression of many diseases, including heart failure,[1] diabetes,[2] cerebrovascular disease,[3] and renal failure.[4] According to the National Health and Nutrition Examination Survey[5] (NHANES), over one in four Americans has hypertension. Hypertensive crisis[6], in particular, is defined as a blood pressure greater than 180/120 and can lead to extensive organ damage,[7] including hypertensive encephalopathy, intracranial hemorrhage, and aortic dissection. Despite health care providers understanding the importance of

proper hypertension management and stressing its significance to patients, hypertensive individuals may still slip through the system, leaving them at risk for the aforementioned complications. According to NHANES data,[5] nearly half of persons with hypertension do not have their blood pressure under control (defined as less than 140/90). The CDC has reported that hypertension awareness and rates of management were the lowest among uninsured patients over the age of 18 years old who are at high risk of developing complications.[8]

Since its establishment in 2011, the Health Outreach Partnership of EVMS Students (HOPES) Free Clinic has served nearly 1,000 patients with the help of over 500 student volunteers and over 100 physicians. HOPES consists of several sub-clinics including Primary Care clinic and six subspecialty clinics (Dermatology, Orthopedics, Ophthalmology, Mental Health, Women's Health, and Ultrasound). Primary Care clinic is usually held one night a week while subspecialty clinics are held one or two nights per month and each clinic night serves 5-10 patients. HOPES is run by several student teams including the Monitoring, Evaluation, and Quality (MEQ) team. The MEQ team compiles a registry of patients with hypertension in order to track health correlations and trends with the goal of improving patient care.

At a HOPES specialty clinic night in August 2016, a 59 year old female patient was found to be in hypertensive crisis. Her blood pressure was recorded to be 206/100 and she was directed to a nearby emergency department for evaluation and treatment. Prior to this incident, patients could be seen directly at HOPES subspecialty clinics for specialized health concerns but subsequently, our clinic introduced a requirement by which patients needed to be thoroughly evaluated at a Primary Care clinic prior to being seen at a subspecialty clinic.

In this study, our aim was to determine how extensive the issue of uncontrolled hypertension is for our patients seen at subspecialty clinics. The goal of this investigation was to guide the appropriate allocation of clinic resources to our Primary Care clinic to ensure that all of our patients could be cared for as holistically as possible.

Methods

A retrospective chart review was conducted on subspecialty clinic visits at HOPES between August 1, 2015 and July 31, 2016. All patients with (a) two or more instances of uncontrolled hypertension (as defined by the JNC8 guidelines[9], i.e. ≥150/90 for age 60+ or ≥140/90 for age <60 or (b) hypertensive urgency[6] (≥180/110) were recorded. We then reviewed the charts of these patients to determine whether they were being followed at HOPES Primary Care clinic for their hypertension. Age, gender, and BMI were also recorded along with whether they had been diagnosed with diabetes. See Figure 1 for inclusion criteria.

Results

A total of 153 unique patients were seen at HOPES subspecialty clinics between August 1, 2015 and July 31, 2016. Of these 153 patients, seven (4.6%) were found to have two or more instances of uncontrolled hypertension and 18 additional patients (11.8%) were found to have instances of hypertensive urgency. These 25 patients were added to our study.

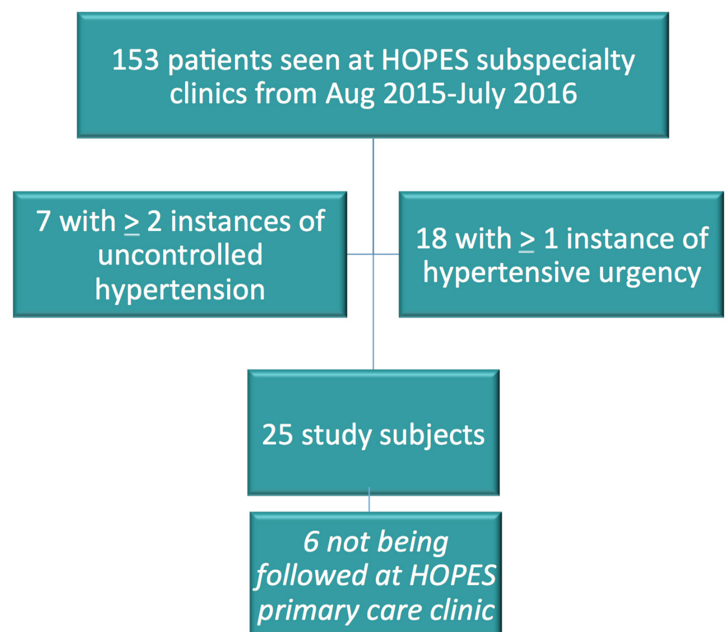

Figure 1: Study inclusion criteria

Out of these 25 patients, 22 were female (88.0%) and 3 were male (12.0%). Seven patients had been diagnosed with diabetes (28.0%). Five were morbidly obese (BMI ≥ 35, 20.0%), 10 were obese (30≤BMI<35, 40.0%), and 9 were overweight (25≤BMI<30, 36.0%); only one was of healthy weight (18.5≤ BMI<25, 4.0%). Their average BMI was 33.29 (SD = 6.66). Their average systolic blood pressure was 157.93 (SD = 22.64) and their average diastolic blood pressure was 97.09 (SD = 13.09). Most importantly, of these 25 patients, six (24.0%) were not concurrently followed at our Primary Care clinic for their hypertension.

Conclusions

Hypertension is a highly prevalent condition affecting over one in four Americans.[5] When left uncontrolled it can lead to complications such as heart failure, diabetes, cerebrovascular disease, and renal failure. Despite health care providers understanding the importance of proper hypertension management and stressing its importance to patients, there remain individuals that slip through the system, leaving their hypertension untreated.[5]

The results of our chart review demonstrated that nearly one in four patients at HOPES with uncontrolled hypertension or an instance of hypertensive urgency were not concurrently being followed at HOPES Primary Care clinic for their hypertension. Some possible reasons include a shortage in the number of available Primary Care clinic appointment slots, clinic cancellations, patients missing appointments, and carelessness in scheduling follow-up appointments.

Due to time and space constraints, the HOPES clinic has the capacity to schedule appointments for only nine to 12 patients per Primary Care clinic night, and there is a total of four to five such nights per month. Despite this, at the time of this analysis, there exists over a four month wait period to be seen at our Primary Care clinic.

Further contributing to this shortage of appointment slots are clinic cancellations; a total of six Primary Care clinic nights were cancelled at our clinic between August 2015 and July 2016, with the most common reasons including the lack of an attending physician (3 out of 6 cancellations) and a shortage of student volunteers (2 out of 6 cancellations). Lastly, the patient no-show rate is also an extensive problem at our clinic. From August 2015 to July 2016, the patient no-show rate for our Primary Care clinic was 36.0%.

By assessing how extensive the issue of untreated uncontrolled hypertension is at our clinic, our staff can better allocate resources to our Primary Care clinic, so as to better schedule appointments for our hypertensive patients so that they may receive holistic care. Steps can be taken to increase the number of patients that can be seen in Primary Care clinic. Clinic cancellations can be prevented through better recruitment of attending physicians and student volunteers. Patient no-shows can be reduced through strong enforcement of our no-show policy and improving appointment reminder calls. Scheduling regular Primary Care appointments to help our patients manage their chronic diseases such as hypertension is of utmost importance.

Limitations to this investigation include the retrospective nature of the analysis performed along with the possibility of inadequate electronic medical record documentation. During the chart review process, it was noted that vital signs were not recorded for multiple specialty clinic appointments, especially for Mental Health clinic nights. It remains unclear as to whether this was simply a clerical error or whether the vitals were not taken at all. Either way, this is against our clinic policy and subsequent steps will be taken to enforce it. Previous studies have shown populations with inadequate insurance are at the highest risk for

having their hypertension remaining untreated[10]. With this in mind, HOPES should remain diligent in its efforts to adequately screen its patient population for hypertension and treat them accordingly.

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