

# Characteristics and Control of Severe Hypertension in a Specialist, Private Practice in Jamaica

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## ABSTRACT

**Objective:** To determine the characteristics of patients with severe uncontrolled hypertension, in a Jamaican specialist practice; the level of blood pressure control achieved in routine clinical practice, and the number/type of antihypertensive medications required for blood pressure control.

**Design:** This was a retrospective analysis of the medical records of 500 consecutive patients presenting to a consultant physician private group-practice between January and December 2000. Data were extracted from the records of the 48 patients with severe (Grade III) hypertension (WHO/ISH).

**Results:** Fifty per cent (252) were found to be hypertensive, 19% (48) had Grade III hypertension. The patients with severe uncontrolled hypertension were of mixed ethnicity, predominantly African. Most were less than 65 years old, never smoked cigarettes and were overweight/obese. Nearly one-half had LDL cholesterol >3.4 mg/dL. Diabetes (31%) and congestive heart failure (21%) were the most common comorbid conditions. Fifteen per cent had no illnesses other than severe hypertension. Cardiovascular symptoms were predominant, followed by dizziness. Only 19% of patients were asymptomatic. More than half of the patients achieved blood pressure > 140/90 mm Hg during the study period. Most patients received four drugs and the number of drugs prescribed increased with duration of follow-up. The antihypertensive medications most prescribed at one year were – angiotensin converting enzyme inhibitors (87%), diuretics (78%), calcium channel blockers (63%) and  $\beta$ -blockers (69%).

**Conclusion:** Severe hypertension was a common problem in the specialist private practice in Jamaica. Most patients had cardiovascular symptoms, were dyslipidaemic and required four or more antihypertensive drugs for adequate long-term control.

# Características y Control de la Hipertensión Severa en un Consultorio Especializado Privado en Jamaica

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## RESUMEN

**Objetivo:** Determinar las características de los pacientes con hipertensión severa incontrolada, el nivel de control de la presión sanguínea logrado en la práctica clínica de rutina, y el número/tipo de medicamentos antihipertensivos requeridos para el control de la presión sanguínea, en un consultorio especializado de Jamaica.

**Diseño:** Este estudio consistió en un análisis retrospectivo de los archivos médicos de 500 pacientes consecutivos que acudieron a la consulta grupal privada de un médico consultante entre enero y diciembre del año 2000. Se extrajeron los datos de los archivos de 48 pacientes con hipertensión severa (grado 3) (OMS/ISH).

**Resultados:** Se halló que el cincuenta por ciento (252) eran hipertensos, 19% (48) tenían hipertensión de grado 3. Los pacientes con hipertensión severa incontrolable eran de etnicidad mixta, predominantemente africana. La mayoría tenía menos de 65 años de edad, nunca fumó cigarrillos, y eran obesos/sobrepesos. Casi la mitad tenía colesterol LDL >3.4 mg/dL. La diabetes (31%) y la insuficiencia cardíaca congestiva (21%) fueron las condiciones comórbidas más comunes. El quince por ciento no padecía enfermedad alguna, excepto hipertensión severa. Los síntomas cardiovasculares fueron predominantes, seguidos por el vértigo. Sólo 19% de los pacientes fueron asintomáticos. Más de la mitad

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de los pacientes logró una tensión arterial  $\leq 140/90$  mm Hg durante el periodo en estudio. La mayoría de los pacientes recibió cuatro drogas y el número de drogas prescritas aumentó con la duración del seguimiento. Los medicamentos antihipertensivos más prescritos en un año fueron: los inhibidores de enzimas convertidoras de angiotensina (87%), los diuréticos (78%), los bloqueadores de los canales de calcio (63%) y los bloqueadores beta (69%).

**Conclusión:** La hipertensión severa era un problema común en la consulta especializada privada en Jamaica. Los pacientes en su mayoría presentaron síntomas cardiovasculares, eran dislipidémicos, y requirieron cuatro o más drogas antihipertensivas para un control adecuado a largo plazo.

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## INTRODUCTION

Current hypertension treatment guidelines advocate lower targets for blood pressure control, *ie*  $< 130/85$  mm Hg (1–3). Randomized clinical trials have demonstrated that these targets can be achieved in more than 90% of patients using a rational combination of drugs (4–6). Practising physicians are, however, sceptical that ‘real world’ patients (without inclusion or exclusion criteria) can achieve similar goals or adhere to the required multi-drug regimens. In addition, severe hypertensives may represent a specific subset of patients who require more intensive therapy. Few studies have been devoted to this high-risk group.

The aim in this study was to determine the characteristics of patients with severe hypertension, in a Jamaican population; the level and durability of blood pressure control achieved in routine clinical practice, and the number and type of antihypertensive medications required for blood pressure control.

## METHODS

The medical records of 500 consecutive patients presenting to the authors’ private group-practice (internal medicine/cardiology) between January and December 2000 were retrospectively analyzed. Hypertension was defined as blood pressure  $> 140/90$  mm Hg. Data were extracted from the charts of the 48 patients with severe (Grade III) hypertension (1). The World Health Organization criteria which define Grade III hypertension as systolic blood pressure  $> 180$  mm Hg and/or diastolic blood pressure  $> 110$  mm Hg were used. The patients were self-referred or referred by general practitioners. All patients were seen by the same physician fortnightly, on the average, until reasonable blood pressure control was achieved, and then monthly. At each visit, history and physical examination including height, weight, body mass index, blood pressure and blood glucose were obtained. In addition, patients were counselled with regard to low sodium diet, weight reduction where appropriate, appropriate exercise and medication adherence. Secondary causes of hypertension were ruled out by history, physical examination and laboratory investigations at the discretion of the physician. At intervals of three months, one year and two years after presentation, data on blood pressure control were extracted. Patients who were no longer in the practice were excluded from the analysis. Control rates at each interval

were expressed as a percentage of the patients still in the practice.

## RESULTS

Of the 500 charts reviewed, 50% (252) were hypertensive and 19% (48) of these had Grade III hypertension. The patients with severe hypertension were of mixed ethnicity, predominantly African. The number of patients who remained in the practice at 2 years was only 50% (24) of the original (48). There were no cases of secondary hypertension in the group.

Table 1 presents characteristics of the 48 patients with Grade III hypertension. Most patients were less than 65 years

**Table 1: Characteristics of 48 patients with Grade III hypertension**

Characteristic	Number	Per cent
Age $< 65$ yrs	30	62
Male	20	42
Never smoked cigarettes	37	77
BMI 25–29 (overweight)	17	35
BMI $> 30$ (obese)	13	27

old, never smoked cigarettes and were overweight or obese. Table 2 presents the predominant comorbidities of the pa-

**Table 2: Predominant comorbidities of 48 patients with Grade III hypertension**

Comorbidity	Number	Per cent
LDL $> 3.4$ mg/dL	23	48
Diabetes mellitus	15	31
Congestive heart failure	10	21
Ischaemic heart disease	7	15
Depression/generalized anxiety disorder	7	15
Valvular heart disease	7	15

tients with severe hypertension. Nearly one-half had low density lipoprotein cholesterol  $> 3.4$  mg/dL. Diabetes mellitus and congestive heart failure were the most common comorbid conditions. Fifteen per cent of patients had no illnesses other than severe hypertension. Table 3 shows the predominant presenting symptoms of the patients with severe hypertension. Cardiovascular symptoms were predominant, followed by dizziness. Only 19% of patients were asymptomatic. Table 4 shows the blood pressure control achieved at

**Table 3:** Predominant presenting symptoms of patients with Grade III hypertension

Presenting symptoms	Number	Per cent
Shortness of breath	12	25
Chest pain	7	15
Palpitations	7	15
Leg swelling	6	13
Dizziness	6	13
None	9	19

**Table 4:** Blood pressure control

Review Interval	Patients still in practice	SBP <140 mmHg	DBP < 90 mmHg	SBP <140 and DBP < 90
3 month	31	71%	81%	68%
1 year	31	52%	58%	42%
2 years	24	63%	75%	58%

three months, one year and two years. More than half of the patients achieved blood pressure > 140/90 mmHg at three months and two years.

The number of antihypertensive drugs prescribed are shown in Table 5. Most patients received four drugs. The

**Table 5:** Number of antihypertensive drugs prescribed, by follow-up time

Number of drugs	3 month (n = 31)	1 year (n = 31)	2 years (n = 24)
1-2	7 (23%)	5 (16%)	3 (12%)
3	9 (29%)	3 (10%)	3 (12%)
4	10 (32%)	14 (45%)	9 (38%)
>5	5 (16%)	9 (29%)	9 (38%)

number of drugs prescribed increased with duration of follow-up. The medications most prescribed at one year were: angiotensin converting enzyme inhibitors (ACEI) (87%), diuretics (78%), calcium channel blockers (63%) and  $\beta$ -blockers (69%).

## DISCUSSION

The results of this study lend support to those of randomized trials which showed that the majority of hypertensive patients can be controlled to BP < 140/90 mmHg with combination therapy, more so since this analysis involved only patients with Grade III hypertension (5-8). The relatively high control rates, compared to published data, may not only be a physician factor but also a willingness of symptomatic patients with severe hypertension to adhere to multidrug therapy. Further study is required in this area.

The results in this study contrast with those of Wilks *et al* (9) who showed that only 18% of all hypertensives were controlled to BP 140/90 mmHg in a private group general practice, a specialist hypertension clinic and a public general clinic, with no differences between the practices. This may represent the use of non-synergistic combinations (diuretic and alpha methyl dopa were the most common medications

used) and physician unwillingness to prescribe multiple medications, in addition to patient factors. The results also contrast with those of Banegas *et al* (10) who studied patients in hospital-based hypertension units in Spain. They found that 42% achieved blood pressure < 140/90 mmHg. Of their uncontrolled patients, approximately 30% were still on monotherapy and they concluded that more aggressive behaviour of physicians was needed.

The number of antihypertensive medications required is again consistent with data from randomized trials such as UKPDS(6), HOT(4), AASK(11), and ABCD(12) (> 66% required three or more drugs) and reflects the severity of hypertension in the study population, but contrasts with those of Amar *et al* (13) who looked at 1 423 and 2 596 patients respectively recruited by general practice and cardiologists in France. Among the uncontrolled patients, 17.5% (general practice) and 26.6% (cardiology practice) received at least three drugs. They concluded that underuse of combination therapy contributed to poor blood pressure control. In the present study, the number of antihypertensive medications increased over the study period and may be due to tolerance to medications, progression of hypertensive vascular disease, and/or the increasing age of the patients and underscores the need for constant surveillance and close follow-up.

The most commonly prescribed agents (ACEIs and diuretics) reflect current treatment guidelines. However, compared to the report of Wilks *et al* (9), where only 38% of patients in the private group general clinic were prescribed ACEIs, in the present study a much higher number (87%) received ACEIs, reflecting prescribing patterns resulting from recent clinical trial data (14-16).

The present study found that most patients with severe hypertension appeared to have cardiovascular symptoms attributable to their hypertension (80%). However, most medical textbooks describe hypertension as an asymptomatic disease. Kjellgren *et al* (17) reported that 57% of hypertensive patients spontaneously reported having symptoms - headache and dizziness being the most frequent. The difference in symptoms, cardiovascular (in the present study) *versus* CNS (Kjellgren *et al*) may reflect the fact that patients in the former study had Grade III hypertension while in the latter the patients had the full spectrum of hypertension, mild to severe. It is also possible that some of the symptoms of patients in the present study may have been due to previously prescribed antihypertensive medications.

This study is limited by its retrospective nature and small number of patients. In addition, patients were classified as Grade III hypertension based on blood pressure at presentation, not when newly diagnosed, and therefore do not represent a 'pure' sample. The number of patients who remained in the practice at two years was only 50% of the original. This may represent the natural migration pattern of patients and may contribute to loss of control with time. As control rates were expressed as a per cent of patients still in the practice, these may be overestimated.

In summary, this study found that severe hypertension was a common problem in a specialist private practice in Jamaica. Most patients had cardiovascular symptoms and were dyslipidaemic. More than 50% of patients were controlled with multidrug regimens. Most patients required four or more antihypertensive drugs for adequate long-term control with the number of antihypertensive medications increasing with time.

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