Journal of Clinical and Basic Cardiology

An Independent International Scientific Journal

Journal of Clinical and Basic Cardiology 2011; 14 (1-4), 23-24

White-Coat Hypertension and Socio-Interactive Dynamics: A Case Report

Gasser S, Zunko S, Kraigher-Krainer E, Gasser R

Indexed in
Chemical Abstracts
EMBASE/Excerpta Medica

Krause & Pachernegg GmbH · VERLAG für MEDIZIN und WIRTSCHAFT · A-3003 Gablitz/Austria

White-Coat Hypertension and Socio-Interactive Dynamics: A Case Report

S. Gasser, S. Zunko, E. Kraigher-Krainer, R. Gasser

From the Department of Cardiology, Medical University of Graz, Austria

White-coat hypertension is defined as high blood pressure on clinical assessment but normal BP elsewhere or on ambulatory measurement [1]. The nature of this phenomenon, which involves autonomic nervous dysregulation as well as psychological factors, is not completely understood. Data show that it tends to co-exist with metabolic risk and overall prevalence is higher among older adults, females, and non-smokers [2]. White-coat hypertension can already be seen in children [3] and later predicts total and cardiovascular mortality during long-term follow-up [4]. In white-coat hypertensives, we find a difference between BP values measured at home, ambulatory BP (note "reversed white-coat" condition), BP assessed by a nurse, and BP measured by a physician [1, 5, 6].

We describe a case of a 58-year-old woman with a history of transient hysterical anopia who presented with an office BP of 225/115 mmHg measured by the clinical professor and normal BP at home. The case was unusual since measured BP reproducibly showed graded values which were normal under self-measurement and increased with the type of person performing the measurement in the following manner: herself < daughter < mother < husband < pharmacist < general practitioner < professor of internal medicine.

Case

A 58-year-old woman (62 kg, 161 cm) presented with angina-like retrosternal pressure and arterial hypertension of 225/110 mmHg gat rest. She reported mild symptoms of dizziness, occasional retrosternal pressure, and headache, especially in stressful situations. Her social anamnesis was normal: happily married, one daughter, academic profession. She reported that throughout her life she had been "hypotensive". Once, during childhood, she had suffered from pyelonephritis without later renal dysfunction. At the age of 9, she had a "near-death experience" during tonsillectomy under full anesthesia. This experience was traumatic and she later had recurrent episodes of hysterical sensorimotor loss and anopia, which disappeared after her 40th birthday. She has, however, remained somewhat "phobic" of hospitals and physicians. Cardiovascular risk factors: hyperlipidemia, hyperuricemia, and moderate adiposity.

Routine laboratory

Renal, cardiac, and hepatic functional parameters, electrolytes, proteins, BCC, thyroid hormones within the normal range, total cholesterol slightly elevated.

ECG

Sinus rhythm, 73 bpm, left-type electrical position, positive Sokolov Index.

Echocardiography

Moderate left ventricular hypertrophy, mild diastolic dysfunction, minimal mitral insufficiency, LVEF 70 %.

Cycle Ergometer Stress Testing

Maximum 125 Watt (25 Watt intervals), maximal frequency: 180 bpm, maximal BP 193/88 (159/114 at rest; noteworthy: automatically assessed, not by nurse or physician), reason for discontinuation: weakness of legs and heart rate.

The patient was asked to perform BP measurements at home at regular intervals.

Blood pressure during self-measurements was regularly around 110/70 mmHg at rest, however, when emotionally distressed, it was reportedly higher (up to 160/100). At the office, we noted a BP of 225/120 mmHg when assessed by the "professor" of internal medicine, however, 160/100 when treated by a nurse. The patient reported reproducibly different BP levels when assessed by different persons (self-measurement < daughter < mother < pharmacist < nurse < GP < professor of internal medicine; Figure 1).

So far, we have not observed a similar case of socio-emotional correlation between blood pressure and the person who performs the BP measurements.

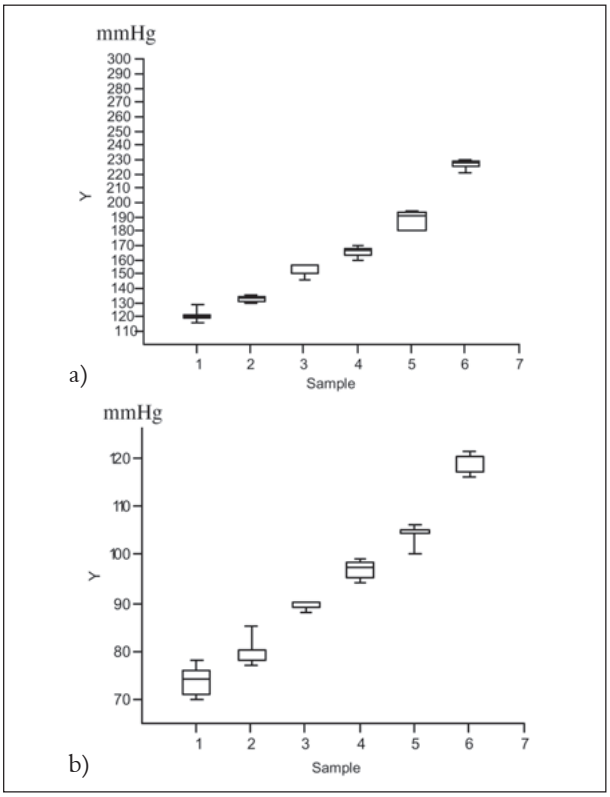

Figure 1. (a) Systolic blood pressure in mmHg; **(b)** Diastolic blood pressure in mmHg; Sample: BP assessment by different persons: measurement by patient (1), daughter (2), mother (3), pharmacist (4), GP (5), and professor of internal medicine (6). One can see the reproducible socio-emotional dynamics of both systolic and diastolic blood pressures in this patient. Number of measurements for each sample: 5.

Conclusion

We conclude that measured BP values may vary within a large range, depending on the socio-emotional interaction between patient and observer. There are known differences between BP assessed by a nurse and a physician, but this phenomenon can also occur among a patient's family members. The observed case gives rise to the question in how far psychotherapeutic measures should support standard antihypertensive therapy and to which extent alternative definitions instead of "white-coat phenomenon" could be more suitable.

References:

1. Bombelli M, Sega R, Faccetti R, et al. Prevalence and clinical significance of a greater ambulatory versus office blood pressure ('Reversed white coat' condition) in a general population. J Hypertens 2005; 23: 513–20.
2. Dolan E, Stanton A, Atkins N, et al. Determinants of white-coat hypertension. Blood Press Monit 2004; 9: 307–9.
3. Sorof JM, Poffenbarger T, Franco K, et al. Evaluation of white coat hypertension in children: importance of the definitions of normal ambulatory blood pressure and severity of casual hypertension. Am J Hypertension 2001; 14: 8855–60.
4. Strandberg TE, Salomaa V. White coat effect, blood pressure and mortality in men. A prospective cohort study. Eur Heart J 2000; 21: 1647–8.
5. Tsai PS. Determinants of the white-coat effect in normotensives and never-treated hypertensives. Clin Exp Hypertens 2003; 25: 443–54.
6. Stergiou GS, Efstthiou SP, Argyraki CK, et al. White coat effect in treated versus untreated hypertensive individuals: a case-control study using ambulatory and home blood pressure monitoring. Am J Hypertens 2004; 17: 124–8.

Correspondence to:
Prof. Robert Gasser, MD PhD (Oxford UK)
Department of Cardiology
Medical University of Graz
A-8036 Graz, Auenbruggerplatz 15
e-mail: robert.gasser@medunigraz.at

Mitteilungen aus der Redaktion

Besuchen Sie unsere

zeitschriftenübergreifende Datenbank

☑ **Bilddatenbank** ☑ **Artikeldatenbank** ☑ **Fallberichte**

e-Journal-Abo

Beziehen Sie die elektronischen Ausgaben dieser Zeitschrift hier.

Die Lieferung umfasst 4–5 Ausgaben pro Jahr zzgl. allfälliger Sonderhefte.

Unsere e-Journale stehen als PDF-Datei zur Verfügung und sind auf den meisten der marktüblichen e-Book-Readern, Tablets sowie auf iPad funktionsfähig.

☑ **Bestellung e-Journal-Abo**