

Blunted nocturnal fall in blood pressure in isolated clinical hypertension

Markus Gnädinger^a, Peter Greminger^b

^a Department of General Practice, University Hospital, Zürich, Switzerland

^b Kantonsspital, St. Gallen, Switzerland

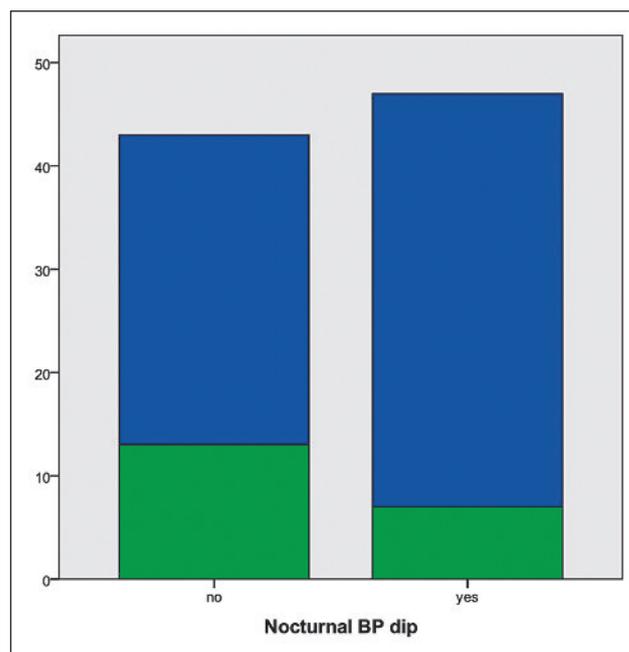
We are grateful to the authors for elucidating aspects of “white coat hypertension” (WCH) or, as they call it, “isolated clinical hypertension” [1]. Given the almost 50% lower risk of cardiovascular death in WCH sufferers compared to patients with sustained hypertension [2], we are surprised at the relatively high proportion of patients with major cardiovascular risk factors among the WCH patient group (regardless of whether they are “dippers” or not) described by Turfaner et al., i.e., 72–80% left ventricular hypertrophy, 15–30% hypertensive retinopathy, 13–16% elevated urinary albumin excretion and 57–82% reduced GFR.

We have detected some statistical imprecision in the paper of Turfaner et al. As shown in figure 1, the presence of hypertensive retinopathy (stage I–III) is more marked in the WCH group without nocturnal blood pressure dip than in the “dippers”.

The authors present an impressive figure of $p < 0.005$ for this fact. But when recalculating the chi-square test by SPSS17, the

Figure 1

Hypertensive retinopathy
 ■ no
 ■ yes



p -value was only 0.08 for a two-sided and 0.067 for a one-sided hypothesis, respectively. Chi-square was 3.1, degree of freedom 1, and Cramer's V 0.08.

1 Turfaner N, Karter Y, Curgunlu A, Ayan F, Mihmanli I, Sipahioglu F. Blunted nocturnal fall in blood pressure in isolated clinical hypertension. *Swiss Med Wkly.* 2009;139(17-18):251–5.

2 Davwes MG, Bartlett G, Coats AJ, Juszczak E. Comparing the effects of white coat hypertension

and sustained hypertension on mortality in a UK primary care setting. *Ann Fam Med.* 2008;6:390–6.

Correspondence:

Dr. med. Markus Gnädinger
 Birkenweg 8

CH-9323 Steinach

E-Mail: markus.gnaedinger@hin.ch

Statistician's comments

It is not stated in the methods section whether the authors tested one-sided or two-sided, but e.g., the p -value in table 1 for gender seems 2-sided (we get $p = 0.1946$, the authors report 0.2, i.e., very similar), so we assume they tested 2-sided throughout.

We agree that the p -value for “HTRP+ (Stage 1, 2, 3)” in table 4 should be 0.08 (chi-

square test). So the < 0.005 reported by the authors of the article seems wrong.

However, in contrast to the 2-sided test the one-sided test is Yates-corrected. In our view, this is inconsistent and not necessary since an adequate number of events are reported. The p -value for a one-sided test without Yates correction is 0.0402 (chi-square 3.057).

Furthermore, we get $p = 0.0142$ (chi-square test) for the “GFR < 90 mL/min/1.73 m²” in table 4, rather than the $p = 0.033$ reported by the authors, but that does not result in a different interpretation.

Prof. Jos Kleijnen
 Dr. Robert Wolff

Authors' reply

The high proportion of target organ damage found in our WCH (white coat hypertension) group compared with the WCH patients in the British study may be due to demographic and socioeconomic features of our population.

For example, our WCH patients were found to have a higher Body Mass Index (BMI) than the normotensives (NT) ($p = 0.042$). Their total cholesterol was higher than the NTs' ($p = 0.04$). The distensibility coefficient (DC) and compliance coefficient (CC) were significantly less than the normotensives' ($p < 0.01$). HTRP was not observed in NTs, but was present in WCH although less frequently and severely than in

hypertensive patients (13% vs 27%) [1]. Also, LVMI was significantly higher in WCH patients than in NTs. There was no difference between the two groups in terms of IMT.

The difference between the dippers and non-dippers in WCH resembles the differences between WCHs and NTs. Dippers have values more like NTs, whereas the non-dipping characteristics make WCH a more dangerous trait.

There is a typing error in table 4. No significant difference was found with chi-square test. This fact is indicated in the results and discussion sections in the main text.

We thank our colleagues for their attention and contribution to our study.

1 Karter Y, Curgunlu A, Altınışık S, Ertürk N, et al. Target organ damage and changes in arterial compliance in white coat hypertension. Is white coat innocent? *Blood Pres.* 2003;12:307–13.

Correspondence:

Dr. Nurver Turfaner

MD, PhD, Istanbul University
 Cerrahpasa Medical Faculty

Department of Family Medicine
 TR-34303-Istanbul

E-Mail: nurver@istanbul.edu.tr