



Letter to the Editor

Author's Reply: Issues regarding ambulatory blood pressure measurement in severely obese population: The guilty upper-arm' Item cover sheet has been updated accordingly
*To the Editor*

Leblanc et al. are correct to note that using inappropriate cuff size and shape for blood pressure (BP) measurements, may lead to measurement error, especially in population of obese patients [1]. In our study, we therefore made every effort to obtain accurate blood pressure measurements based on the current guidelines of the European Society of Hypertension [2,3]. To minimize impact of arm size and shape in obese persons on BP values, we used cuffs with bladder size adapted to arm circumference and with tonco-conical shape. Our methodology meets all actual standards concerning BP measurements in obese patients. Using the same stringent methodology, we assessed the blood pressure at baseline, after ten-day and six-month follow-up, which indicated reduction of blood pressure values and variability after bariatric surgery in extremely obese patients already 10 days after procedure before weight loss occurred [4].

For the BP assessment, we used the 24-hour blood pressure monitoring (ABPM), which has several advantages over manual BP measurements. It eliminates white-coat effect, minimizes observer bias, and improves accuracy by providing a standardized protocol and measurement technique with an automated, in our case oscillometric (SpaceLab 90207), sphygmomanometer [4]. Moreover, ABPM provides information about diurnal profile and fluctuations of BP, and it is a stronger predictor of cardiovascular morbidity and mortality than conventional measurement. Therefore, ABPM is steadily gaining recognition as the gold standard for diagnosing hypertension [5]. It is also recommended for the evaluation of patients with hypotension on antihypertensive medications, episodic, white-coat or masked hypertension and autonomic dysfunction, resistant hypertension and those on complex antihypertensive regimens [4].

We agree with Leblanc et al. that the problem with optimal cuff and bladder in relation to arm size, especially in extremely obese subjects, is of paramount importance. However, as indicated by Kallioinen et al.,

there are many more sources of potential bias beyond the calf size and shape, and they for the most part affect office or ward measurements [6]. Such identified 29 potential sources of error, including wrong calf size and shape, may lead in absolute terms to inaccuracy ranging from -24 to $+33$ mmHg for SBP and -14 to $+23$ mmHg for DBP [6].

In consequence as indicated by Picone et al [7]., in line with the comment by Leblanc et al., and along our own lines of reasoning, we still need an improvement in noninvasive cuff methods to estimate brachial BP.

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