



On Resistant Hypertension: We must know the quality control of the blood pressure measuring instrument and take refresher courses to measure blood pressure

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Hypertension is a public health concern. It is a silent killer [1]. It is controlled by medicines often more than one and that has to be consumed at different points of time in a day [2]. The drug therapy generally continues lifelong if not with some compelling indication to stop it. Temporary reductions of dose or dose adjustments may be necessary [3]. All these require medical support if not specialist intervention. So, the management of hypertension is a costly affair [4]. Control of hypertension leads to positive health outcomes. Therefore, control of hypertension is an important issue of the health care system [1].

Resistant hypertension is a term that is now a matter of great clinical concern. In Google Scholar in 2023 (now it's just February) a search with "Resistant Hypertension" finds 9,490 results [5]. If the search keyword is changed to "hypertension" omitting the word "resistant" the search engine finds 23,100 entries [6].

Therefore, at least roughly we can say that there is considerable current interest in the study of resistant hypertension since 2023 around 41% of the studies investigating (or mentioning the word) hypertension write something about resistant hypertension. The burden of resistant hypertension among hypertensive patients is not less in these days [7]. So, the interest in the study of resistant hypertension is practically justifiable.

Resistant hypertension means when hypertension is not adequately controlled with three medications including a diuretic, long-acting calcium channel blocker, and renin-angiotensin system antagonists. The drug's doses should be administered at the highest tolerable doses. For true resistant hypertension contrary to pseudo-resistant hypertension compliance to drug therapy and the absence of white coat effects must be ensured [8].

When it is proved beyond any doubt that a case of resistant hypertension is diagnosed a fourth medicine has to be generally added without any treatment inertia because resistant hypertension has a negative impact on patients' health [9]. The drugs that are added are commonly a potassium-sparing diuretic or a beta blocker if not already prescribed. Recently it is proved that even mineralocorticoid synthesis inhibitors work in controlling resistant hypertension [10].

With this background information on resistant hypertension, I wish to emphasize that diagnosis of resistant hypertension demands good blood pressure-measuring practices. Further, the pseudo resistance, as well as white coat effects, have to be excluded and adherence to the pills has to be confirmed [11].

The aforementioned exclusion criteria of resistant hypertension are not easy to screen at least in our system. The Centre for disease control and Mayo Clinic mention some good blood pressure measuring practices. The accuracy of the blood pressure measuring instrument has to be checked at least once a year to achieve a good blood pressure measurement. I believe that in our country the quality control aspect of the blood pressure measuring instrument has to be seriously looked into for patient welfare and proper BP monitoring [12,13]. As per the recommendation of the American Heart Association the person who is measuring blood pressure (the health care professional may even be a physician) should be considered for retraining [2]. Blood pressure measurement is a maneuver that a medical student starts in the first year MBBS course and from the third year, he cannot think that he has to repeatedly train himself for correct blood pressure measurement. Authorities like CDC have published manuals for consideration of the participants of the Blood Pressure monitoring training course [14]. Nowadays even virtual courses are also offered for both patients and health care professionals [15,16]. Nowadays it is proved beyond any doubt that blood pressure measurement mistakes (misreporting) happen with healthcare professionals and web-based training improves the measurement aspect of blood pressure management [17]. Otherwise, also healthcare professionals are human beings and so if not repeatedly trained (refresher training) they will misreport blood pressure. We must accept such fact.

Now resistant hypertension is a burning problem. For its diagnosis, accurate blood pressure monitoring is absolutely essential. So, I request that all medical students and all health care professionals get quality control of the blood pressure monitoring instrument done at least yearly and register for a BP monitoring course (maybe web-based) at least once a year. I believe that it will be a cornerstone of good blood pressure management and the pioneering act of proper diagnosis of resistant hypertension.

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