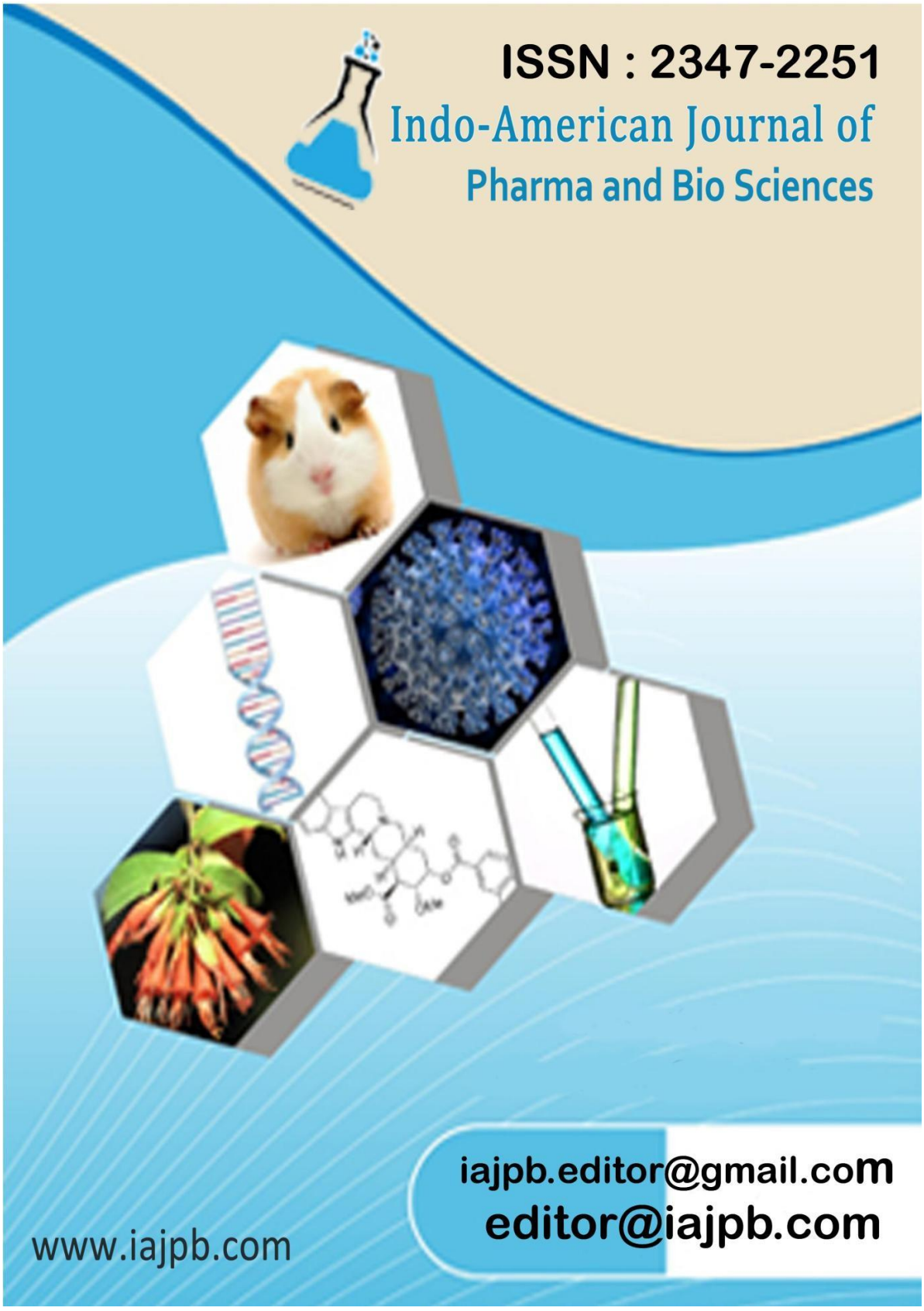
ISSN : 2347-2251
Indo-American Journal of
Pharma and Bio Sciences
iajpb.editor@gmail.com
editor@iajpb.com
www.iajpb.com

Indo-Am. J. Pharm & Bio. Sc., 2023

Indian American Journal of Pharma and Bio Sciences

ISSN 2347-2251 www.iajpb.com
Vol. 21, Issue 3, July 2023

European Society of Hypertension Guidelines 2023: Latest Advances in Diagnostic and Therapeutic Approaches to Hypertension

B. Sandhya Rani[1], I.Triveni[2], B.Revathi[3], T.Santhi Priya[4]

1. **Professor, Department of Pharmacology, QIS College of pharmacy, Ongole, AP**
2. **Assistant Professor, Department of pharmacology, QIS College of pharmacy, Ongole, AP**
3. **Professor, Department of pharmacology, QIS College of pharmacy,Ongole,AP**
4. **Assistant Professor, Department of Pharmacology QIS College of pharmacy,Ongole,AP**

Abstract

The publication of Hypertension, the Society's official publication, published the 2023 European Society of Hypertension (ESH) recommendations for the diagnosis and treatment of hypertension, which were announced during the 32nd European congress on the condition in Milan in 2023[1]. Based on the findings of research and meta-analyses published over the last five years, they provide a lot of additional details on several diagnostic and treatment elements of the illness in comparison to the previous recommendations released in 2018[2]. Debatable topics covered in the document include the involvement of renal denervation in hard-to-treat hypertension, the role of beta-blocking drugs in the therapeutic approach to high blood pressure, and target blood pressure values to be reached by antihypertensive medication. This editorial will highlight the key innovations in the document, which bases its recommendations on three levels of evidence: data from small clinical studies (evidence C), non-randomized clinical trials (evidence B), and randomized clinical trialormeta-analyses (evidence A) [1].

***Corresponding author**

B. Sandhya Rani[1]

sandhyaranib@gmail.com

Introduction

The ESH recommendations include a thorough explanation of the benefits and drawbacks of the various methods of measuring blood pressure that are available use inclinical practice. On the basis of their sole use in epidemiological and intervention studies conducted since the early 1970s, office or clinic blood pressure measures continue to be recognized as the cornerstone of the diagnosis and treatment of the hypertensive condition. Nonetheless, guidelines acknowledge the increasing significance of blood pressure readings taken outside of clinical home and round-the-clock blood pressure checks [1]. Ambulatory blood pressure specifically enables the detection of many clinical hypertensive phenotypes, including masked hypertension, white-coat hypertension, non-dipping, dipping, or reverse-dipping, as well as hypertension at night and an early morning blood pressure spike. Home blood pressure may also be used to identify some of these phenotypes, which has the added benefit of detecting daily or long-term fluctuations in blood pressure. 24-hour home and ambulatory blood pressure monitoring has been considered a highly recommended practice in the diagnostic and therapeutic work-up of the hypertensive condition for these and other reasons [1]. Home blood pressure has an added benefit for the patient's follow-up as it enables the patient to monitor their blood pressure at home, which helps them overcome what is likely the biggest obstacle to blood pressure control: poor treatment adherence [1]. The expanding telemedicine strategy will most likely also aid in achieving this therapeutic objective. This context also discusses blood pressure fluctuation throughout the day and at night, which is an additional hemodynamic characteristic of prognostic value that ambulatory blood pressure enables to accomplish [3]. It should also be underlined that ambulatory assessment

ISSN 2347-2251 www.iajpb.com
Vol. 21, Issue 3, July 2023

of hemodynamic variables includes heart rate throughout the day and at night, which are measures that, as the paragraph that follows, provide crucial hints for cardiovascular risk stratification [4]. Evaluation of cardiovascular risk and hypertension-mediated organ damage is a recurring theme in the ESH recommendations paper [1]. Low birth weight, unfavorable pregnancy outcomes like preterm delivery, gestational hypertension and diabetes mellitus, frailty in old age, migration, and exposure to air pollution and traffic noise are some of the new organ damage metrics that can enhance cardiovascular risk stratification. The newly presented clinical problems marked by high blood uric acid levels and resting clinic heart rate values larger than 80 beats per minute are confirmed risk factors, along with the time- honored ones (cigarette smoking and e-cigarette vaping, overweight, obesity, advanced age, and gender). The global cardiovascular risk profile of the hypertensive patient is also more clinically and therapeutically relevant according to current recommendations, which specifically highlight the negative consequences of diabetes mellitus, chronic heart failure, and advanced renal disease when paired with hypertension [1]. The need of beginning therapy is emphasized for individuals who, although having blood pressure readings within the so-called high normal range, have a high or very high cardiovascular risk because of the existence or history of clinical show signs of heart disease. The new recommendations also emphasize the significance of sleep apnea syndrome, which is a disorder that is often identified in obese individuals and may significantly raise cardiovascular risk, especially if patients also have raised blood pressure [1]. Additionally, recommendations for blood pressure thresholds and objectives for the commencement and aim of

pharmacological therapy are provided by the ESH 2023 guidelines. The traditional office blood pressure readings of 90 mmHg diastolic and 140 mmHg systolic are confirmed to be those that need therapeutic action. Patients over 80 years of age constitute an exception, when the systolic blood pressure treatment threshold is established at higher levels. According to meta-analyses of randomized trials, the target blood pressure value for patients between the ages of 18 and 64 is also set below 130/80 mmHg, while the initial target for patients between the ages of 65 and 79 is set below 140/80 mmHg because treatment-dependent protection is already marked at this target with a good balance with treatment tolerability [1]. However, it is stated that in order to benefit from the incremental benefit of this further blood pressure decrease, blood pressure should be further lowered to values below 130/80 mmHg if medication is well tolerated [1]. For patients over 80 or with isolated systolic hypertension, more conservative blood pressure targets are advised. However, in no situation is it advised to actively lower blood pressure to values below 120/70 mmHg, as these lower values may result in serious side effects (which may require stopping treatment) and increase cardiovascular outcomes in certain patients.

The 2023 Guidelines state that decreasing blood pressure "per se" is the main way that antihypertensive therapy works since the lower blood pressure values obtained, independent of the medications used, increase the advantages of the treatment [1]. As a result, the recommendations take a more permissive stance than in the past and include five kinds of antihypertensive medications that are often used in clinical practice: beta-blockers, ACE inhibitors, angiotensin II receptor blockers, calcium channel blockers, and thiazide and thiaizide-like diuretics. In contrast to what was proposed in the previous guidelines document [2], the therapeutic innovation of the recommendations concentrates on this last class of pharmacological substances, which offers a therapeutic option at the same degree of significance as the other pharmacological classes. This is supported by a thorough and documented analysis of the effectiveness of beta-adrenergic receptor blocking medications in lowering blood pressure and reducing cardiovascular outcomes (heart failure, coronary events, and stroke) in placebo-controlled trials. It also includes evidence that beta-blockers have a clear indication for use in a number of clinical conditions commonly linked to hypertension (over 50) [5].

The 2023 ESH guidelines strongly advise starting treatment with a combination of two antihypertensive medications at effective dosages, with initial monotherapy being the preferred approach for a small percentage of patients, such as those over 80, frail patients, or patients with very mild blood pressure increases. occurs when blood pressure is within the high normal range in individuals with a history of cardiovascular events or on the low blood pressure side of grade I hypertension [1]. According to the guidelines, this intervention reduces therapeutic inertia, or the failure to uptitrate treatment to a drug combination even when blood pressure is not controlled, improves adherence to treatment, and enables adequate blood pressure control to be achieved quickly. Guidelines state that the first treatment step should be followed by increasing the dosage of combination components and then by a three-drug combination strategy that may achieve control in at least 90% of hypertensive patients if there is no adequate blood pressure-lowering effect or control to target. Numerous criteria, such as the existence of comorbidities, organ damage, the patient's age and metabolic profile, and the presence of a somewhat raised global cardiovascular risk, influence the choice of the two medication pharmacological associations to be implemented in the particular patient. For instance, the use of a beta-blocking medication as part of a combination therapy is indicated by the presence of elevated resting heart rate data. With the exception of the combination of an ACE inhibitor and a blocker of the renin-angiotensin system, guidelines offer suggestions for a number of potential combinations among the five main classes of antihypertensive medications. It has been noted that the majority of adoptable combinations, if not all of them, are now offered as a single pill, which is linked to better treatment adherence [6]. Lastly, it should be noted that a combination treatment may have a positive effect on the so-called "residual risk" (level of evidence B) if it is used early in the development of the hypertensive pathology, that is, before organ damage is established and clinically evident. Based on the observation that hypertension patients treated with regulated blood pressure had a greater long-term risk of cardiovascular events than healthy normotensive participants of the same age, this clinical condition has been shown in several research. Among the many advanced possibilities, it is thought that this could rely on the fact that blood pressure-lowering therapies are sometimes administered too late, that is, after organ damage has already occurred, which has a detrimental effect on the patient's total cardiovascular risk profile.

The evidence supporting renal denervation as a therapeutic procedure that can lower blood pressure in patients with resistant or hard-to-control hypertension is considered sufficient in the ESH guidelines to recommend the use of this approach when drug-related treatment strategies have failed [1]. This is because clinical investigations comparing renal denervation with sham denervation have shown blood pressure reductions over the last five years using both office blood pressure measures and outpatient 24-hour blood pressure monitoring [7]. However, the ESH recommendations emphasize that renal denervation is only effective for resistant hypertension or illnesses that are difficult to treat, which disproves the notion that it may be used in a broad range of clinical settings, as some authors have suggested [1].

An additional element of the ESH guidelines' novelty is represented. by the focus placed on the hypertensive patient's follow-up regimen, which is an essential step in achieving long-term blood pressure management. According to guidelines, blood pressure should be under control no later than three months after the first consultation, or even sooner if the patient has a significant cardiovascular risk [1]. Additionally, they advise periodic out-of-office blood pressure checks and regular visits (first programmable every three months, and thereafter annually) to regulate blood

pressure readings and ensure that patients are following the recommended treatment plan [1]. In contrast to an organ damage noticeable advancement, a final recommendation is to frequently check for organ damage status since its reversal may indicate the appropriateness of the treatment decision.

In summary, the key features of the new ESH recommendations include a number of innovations in addition to a substantial amount of incremental information about the diagnostic and therapeutic aspects of hypertension. For several comorbidities that have never been treated before, the best course of action is described in addition to conventional treatment recommendations. To provide the guidelines a suitable educational value, the reasoning behind each advice is discussed; nevertheless, to maintain simplicity, recommendations are summarized at the conclusion of each part of the text.

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