THE ANATOLIAN JOURNAL OF CARDIOLOGY

Official journal of the TURKISH SOCIETY OF CARDIOLOGY

# Forest Therapy and Cardiovascular Outcomes in Elderly Hypertensive Patients: Points for Consideration

LETTER TO THE EDITOR

To the Editor,

We read with great interest the study by Liang et al[1] entitled "The Efficacy of Forest Therapy on Negative Emotions, Oxidative Stress, and Cardiovascular Disease Risk in Elderly Hypertensive Patients." The authors should be congratulated for this prospective randomized study investigating the potential cardiovascular benefits of forest therapy in elderly patients with hypertension. While this innovative non-pharmacological approach is of considerable interest, several concerns warrant further discussion.

The reported reduction in cardiovascular events should be interpreted with caution. Although a statistically significant reduction in cardiovascular events was observed in the forest therapy group (hazard ratio [HR] = 0.34, 95% CI: 0.12-0.95, $P = .018$), only 18 events occurred during follow-up. Given the limited number of events, HR estimates may be unstable and susceptible to random error. Furthermore, 27 participants (22.5% of the study population) were lost to follow-up. Considering the modest sample size, this loss may influence the reliability of the survival analysis. Additional information regarding the baseline characteristics of these patients would be valuable to better evaluate the potential impact of attrition bias. We also noticed a potential inconsistency in Table 2. Baseline systolic blood pressure was reported as 146 ± 10 mm Hg in the control group and 166 ± 185 mm Hg in the study group. This seems unusual and may represent a typographical or reporting error, and clarification from the authors would be helpful.

Pharmacological therapy remains the cornerstone of blood pressure control and cardiovascular risk reduction in patients with hypertension.[2,3] Although the authors reported that patients maintained their prescribed antihypertensive medications throughout the study, detailed information regarding antihypertensive drug classes, baseline treatment intensity, or medication adherence was not provided. Given the importance of these factors, even minor differences in medication adherence or treatment adjustments could potentially have influenced the outcomes, and their omission makes it difficult to assess the independent contribution of forest therapy to the observed benefits.

Although the study was designed to assess forest therapy, patients in the study group were exposed to multiple potentially beneficial components, including supervised walking, social interaction, and sensory stimulation. Therefore, it is difficult to isolate the independent effect of the forest environment. Moreover, although improvements in oxidative stress and emotional status may have contributed to the reduction in cardiovascular events, the study was not designed to formally evaluate a mechanistic relationship between changes in oxidative stress markers and clinical outcomes. In addition, oxidative stress in hypertension includes complex pathways related to endothelial dysfunction, vascular inflammation, and arterial stiffness; therefore, assessment based solely on superoxide dismutase and malondialdehyde levels may provide only a limited representation of the overall oxidative stress burden.[4] Consequently, the observed association should be considered hypothesis-generating rather than definitive evidence.

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**Available Online Date:** ugust 11, 2026

**Cite this article as:** Şengör BG, Unkun T. Forest therapy and cardiovascular outcomes in elderly hypertensive patients: points for consideration. *Anatol J Cardiol.* 2026;30(11):833-834.

DOI: 10.14744/AnatolJCardiol.2026.6726

Despite these concerns, the study highlights an innovative and clinically relevant approach to cardiovascular risk prevention. Additional large-scale trials with longer follow-up are warranted to confirm these promising findings.

*Note: The authors of the relevant article were given the opportunity to reply, but they chose not to send a response.*

**Declaration of Interests:** The authors have no conflicts of interest to declare. None of the authors is a member of the Editorial Board or Advisory Board of the Anatolian Journal of Cardiology.

**Funding:** The authors declare that this study received no financial support.

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