



# Clinical and epidemiological implications of the data on the Korean clinical hypertension cohort

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Lee et al. [1] reported long-term cardiovascular (CV) events in a multi-center clinical hypertension cohort, stating that the overall CV event rate was 15%, thus 19.4%, 13.3%, and 11.2% in high-, moderate-, and low-risk groups, respectively. The operational definitions of the CV risk groups are not fully consistent with the current guidelines. Patients with target organ damage and/or multiple risk factors were categorized as being of moderate rather than high risk and some patients categorized as low-risk might be at moderate risk. Thus, the CV risks in the moderate- or low-risk groups of this study may be higher than previously reported.

The overall CV event rate is high but the differences between this and the figures of previous studies are substantial. In the hypertension cohorts of The National Health Insurance Service–National Sample Cohort, the 10-year CV event rate was at most 5%, thus 2% in young subjects and approximately 2% (strokes) during 4-year follow-up of a population of comparable age [2,3]. It could be argued that the present study is not representative of Korean hypertension patients in general. First, the high prevalence of previous myocardial infarction and the nonlinear cumulative incidence of infarction during follow-up suggests that selection bias may be in play, as indeed the author pointed out

in the paper on study design [4]. Second, most participants were treated for hypertension and their blood pressures (BPs) at the time of diagnosis thus unavailable. BP may therefore underestimate the risk [5]. Third, reports using big data commonly include only patients with newly diagnosed hypertension, thus those with an absence of hypertension during an earlier specific time window without prescription of antihypertensive medication [2,3].

However, this study highlights the fact that the CV event rate is comparable to the estimated risks in guidelines from Western countries [6,7]. The author states that non-standardization of procedures in referral cardiology clinics and possible whitecoat effects may have caused BP overestimations; the figures may be higher than those measured in non-clinical settings. The clinical BP of this study does not meet the research standard; this is usually at least 5 mmHg lower than the routine clinical BP. Rigorous standardization is essential [8].

In terms of clinical implications, first, standardized BP measurement when planning intensive BP control does not yield overestimates, and adjunctive out-of-office BP monitoring should be used as much as possible [9]. Second, this study does not necessarily refute the idea that the target BP should be below 140 or 130 mmHg, as indicated by the clinical guidelines. Third, given the substantial CV event rates in the global CV risk groups encountered in re-

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al-world clinics, initial global CV risk evaluation in terms of hypertension followed by an individualized approach guided by that risk are mandatory.

### Conflict of interest

No potential conflict of interest relevant to this article was reported.

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