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# FIB-4 Index and Isolated Nocturnal Hypertension Despite Normal Daytime Blood Pressure in a Cross-Sectional Study Running Title: FIB-4 and Isolated Nocturnal Hypertension

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# FIB-4 Index and Isolated Nocturnal Hypertension Despite Normal Daytime Blood Pressure in a Cross-Sectional Study

**Running Title: FIB-4 and Isolated Nocturnal Hypertension**

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**Abstract**

Background: Evidence relating the fibrosis-4 (FIB-4) index to isolated nocturnal hypertension is limited. We evaluated the association between FIB-4 and isolated nocturnal hypertension in adults undergoing ambulatory blood pressure monitoring (ABPM).

**Methods:** This single-center retrospective cross-sectional study included 239 untreated adults who underwent ABPM and same-day laboratory testing between October 1, 2025, and June 1, 2026. Isolated nocturnal hypertension was defined as nighttime systolic blood pressure ≥120 mmHg and/or diastolic blood pressure ≥70 mmHg, with daytime blood pressure <135/85 mmHg. FIB-4 was compared between 67 patients with isolated nocturnal hypertension and 172 normotensive participants. Sequential logistic regression models included age in the final model; model calibration and variance explanation were assessed using the Hosmer–Lemeshow test and Nagelkerke $R^2$ statistics; and receiver operating characteristic (ROC) analysis evaluated the diagnostic performance of FIB-4 alone.

**Results:** FIB-4 was higher in patients with isolated nocturnal hypertension (median [interquartile range], 1.390 [1.000–2.670] vs. 0.785 [0.545–1.043]; $p < 0.001$). After adjustment for age, C-reactive protein (CRP), urea, creatinine, and sex, FIB-4 remained associated with the outcome (adjusted odds ratio [OR] per 1-unit increase, 11.431; 95% confidence interval [CI], 4.827–27.070; $p < 0.001$). CRP was also associated with the outcome (adjusted OR, 1.084; 95% CI, 1.022–1.149; $p = 0.007$). Age was positively associated in univariable analysis but inversely associated in the final model (adjusted OR, 0.956; 95% CI, 0.924–0.988; $p = 0.008$). The unadjusted area under the ROC curve for FIB-4 was 0.791 (95% CI, 0.723–0.859); a sample-derived cutoff of 0.975 yielded 77.6% sensitivity and 70.9% specificity.

**Conclusions:** Higher FIB-4 values were associated with isolated nocturnal hypertension after adjustment for age and other included covariates. Incremental predictive value and clinical utility remain to be established and require independent validation.

**Keywords:** Fibrosis-4 index; isolated nocturnal hypertension; ambulatory blood pressure monitoring; blood pressure; cardiovascular risk.

## Background

Hypertension is a major modifiable cardiovascular risk factor. Ambulatory blood pressure monitoring (ABPM) characterizes daytime and nighttime blood pressure and can identify abnormalities that are not apparent from office measurements [1]. Nocturnal hypertension denotes elevated absolute nighttime blood pressure, whereas non-dipping describes a reduced nighttime decline relative to daytime values. These phenotypes are related but are not interchangeable [1]. The ABC-H meta-analysis found that nocturnal dipping patterns provided prognostic information beyond mean 24-hour systolic blood pressure, underscoring the relevance of nighttime assessment [2].

Isolated nocturnal hypertension occurs when nighttime blood pressure is elevated despite normal daytime values. It has been associated with increased arterial stiffness and may remain unrecognized when assessment is limited to office or daytime measurements [3]. Population-based and referral cohorts have reported differing frequencies of this phenotype, emphasizing the importance of clinical setting and treatment status [4, 5]. Identifying routinely available markers associated with this phenotype could help inform future research on patient selection for ABPM.

Liver-related indices are of interest because hepatic and cardiovascular risk factors overlap. In the prospective KoGES-ARIRANG study, a higher fatty liver index was associated with incident hypertension [6]. In the Framingham Heart Study, a higher predicted risk of fibrosis based on the nonalcoholic fatty liver disease (NAFLD) Fibrosis Score was associated with

hypertension and wider pulse pressure [7]. Studies using hepatic ultrasonography have also reported associations between hepatosteatosis and abnormal nocturnal blood pressure patterns [8, 9].

The fibrosis-4 (FIB-4) index combines age, aspartate aminotransferase (AST), alanine aminotransferase (ALT), and platelet count. Originally developed to estimate fibrosis in patients with human immunodeficiency virus (HIV)/hepatitis C virus (HCV) coinfection, it has also been investigated in cardiovascular risk assessment [10]. In a large cohort of patients with NAFLD, nonalcoholic steatohepatitis, or risk factors for steatohepatitis, higher FIB-4 values were associated with major adverse cardiovascular events after adjustment for established risk factors [11]. These findings support investigation of FIB-4 in other cardiovascular phenotypes but do not establish that an elevated index represents hepatic fibrosis in individuals without known liver disease.

Evidence relating FIB-4 to nocturnal blood pressure patterns remains limited. Küçük and Arslan reported higher FIB-4 values in non-dippers than in dippers and normotensive controls [12]. Their findings concern the relative nighttime decline in blood pressure and do not resolve whether FIB-4 is associated with elevated absolute nighttime blood pressure when daytime values remain normal. This distinction defines the question addressed by the present study.

We evaluated the association between FIB-4 and isolated nocturnal hypertension in untreated adults undergoing ABPM and same-day laboratory testing. We compared FIB-4 values between patients with isolated nocturnal hypertension and participants with daytime and nighttime ambulatory normotension, assessed the association in sequential multivariable models including an age-adjusted model, and evaluated the discrimination of FIB-4 alone within the study sample.

## Methods

### Study design and participant selection

This single-center retrospective cross-sectional study examined the association between the FIB-4 index and isolated nocturnal hypertension. Records of adults aged 18 years or older who underwent ambulatory blood pressure monitoring at Karaman Training and Research Hospital between October 1, 2025, and June 1, 2026, were reviewed. Inclusion required valid ABPM recordings and same-day laboratory measurements sufficient to calculate FIB-4.Patients with heart failure, malignancy, chronic kidney disease, thyroid disease, a body mass index greater than 30 kg/m², liver disease or a history of treatment for liver disease, alcohol use, or use of lipid-lowering medication were excluded. Patients receiving antihypertensive treatment were also excluded.

The analysis compared normotensive participants with patients with isolated nocturnal hypertension. Other hypertension phenotypes were not included in this comparison. Data were obtained from routine clinical records; no additional procedures or interventions were undertaken.

### Clinical and laboratory data

Demographic, clinical, laboratory, and ABPM data were extracted from the hospital information system and patient records. Recorded variables included age, sex, comorbidities, alcohol consumption, and statin use. Laboratory parameters comprised aspartate aminotransferase, alanine aminotransferase, platelet count, C-reactive protein (CRP), urea, creatinine, estimated glomerular filtration rate, albumin, sodium, potassium, thyroid-stimulating hormone, white blood cell count, and hemoglobin.

Laboratory measurements obtained on the same day as ABPM were used to calculate FIB-4 and assess the recorded biochemical and hematological parameters. Data were de-identified before analysis, and access was restricted to the research team.

**Ambulatory blood pressure monitoring**

ABPM was performed using a Schiller BR-102 Plus device. Measurements were obtained every 30 minutes during the daytime period (07:00–23:00) and every 60 minutes during the nighttime period (23:00–07:00). The nighttime measurement interval was selected to minimize sleep disruption. Daytime and nighttime periods were defined using these fixed clock intervals. Only 24-hour ABPM recordings with at least 70% valid measurements, including a minimum of 20 daytime and 7 nighttime readings, were included in the analysis.

Mean systolic and diastolic blood pressures were assessed over the 24-hour, daytime, and nighttime periods. Normotension was defined as mean daytime systolic blood pressure below 135 mmHg and diastolic blood pressure below 85 mmHg, together with mean nighttime systolic blood pressure below 120 mmHg and diastolic blood pressure below 70 mmHg. Isolated nocturnal hypertension was defined as mean nighttime systolic blood pressure of at least 120 mmHg and/or diastolic blood pressure of at least 70 mmHg, with mean daytime blood pressure below 135/85 mmHg. These thresholds are consistent with established ambulatory hypertension criteria [1].

Recorded nocturnal dipping patterns were extracted from the ABPM records and compared between groups.

**FIB-4 calculation**

FIB-4 was calculated as age (years) × AST (U/L) / [platelet count ($10^9$/L) × √ALT (U/L)]. FIB-4 was analyzed as a continuous variable; the index was not considered direct evidence of liver fibrosis. The formula was used as originally described [10].

**Outcomes**

The principal comparison was the between-group difference in FIB-4 index values. Additional analyses evaluated the association of FIB-4 with isolated nocturnal hypertension using logistic regression and its discrimination between the two groups using receiver operating characteristic (ROC) analysis. Ambulatory blood pressure measurements, laboratory parameters, and recorded dipping patterns were also compared between groups.

**Statistical analysis**

All analyses were performed using SPSS version 25.0 (IBM Corp., Armonk, NY, USA). Continuous variables were summarized as medians and interquartile ranges. Categorical variables were summarized as frequencies and percentages. Between-group comparisons used the Mann–Whitney U test for continuous variables and the chi-square test or Fisher's exact test, as appropriate, for categorical variables.

Univariable logistic regression analyses evaluated FIB-4, age, CRP, urea, creatinine, potassium, and sex in relation to isolated nocturnal hypertension, with normotension as the reference outcome. Three sequential multivariable models were examined. Model 1 included FIB-4, CRP, urea, and creatinine; Model 2 additionally included sex; and Model 3 additionally included age as a separate covariate. The age-adjusted model was used to assess whether the FIB-4 association persisted after accounting for age, which is also a component of the index.

Regression estimates were expressed as odds ratios (ORs) with 95% confidence intervals (CIs). Continuous-variable ORs represented a 1-unit increase in the respective measurement scale; female sex was the reference category. Spearman rank correlation assessed the association between age and FIB-4. Tolerance and variance inflation factors (VIFs) for these two predictors were obtained using an auxiliary linear regression procedure. These diagnostics assessed collinearity between age and FIB-4, rather than a complete assessment of collinearity among all Model 3 covariates. Model calibration and goodness-of-fit for the multivariable models

were evaluated using the Hosmer–Lemeshow test, while model variance explanation was assessed using the Nagelkerke $R^2$ statistic.

ROC analysis evaluated the unadjusted discrimination of FIB-4 alone for distinguishing isolated nocturnal hypertension from normotension. The area under the curve (AUC), its standard error, and 95% CI were reported. The cutoff was selected by maximizing the Youden index (sensitivity + specificity − 1). The cutoff and corresponding sensitivity and specificity were estimated in the same study sample. This analysis did not evaluate the discrimination of Model 3 or the incremental value of adding FIB-4 to an age-based clinical model.

The study dataset comprised 239 participants, including 67 patients with isolated nocturnal hypertension and 172 normotensive participants. No missing data were reported for the analyzed variables.

**Ethical approval**

The study was approved by the Karamanoğlu Mehmetbey University Ethics Committee on 30 September 2025 (approval number: E-11095095-050.04-286695). The requirement for informed consent was waived by the ethics committee. Patient confidentiality was maintained throughout data collection and analysis.

Clinical trial number: not applicable.

**Use of artificial intelligence assistance**

ChatGPT (OpenAI) was used to assist with language editing, manuscript restructuring, and reference formatting and checking. It was not used to generate patient data or perform the statistical analyses reported in this study.

## Results

### Participant characteristics and ambulatory blood pressure

The study included 239 participants: 172 with ambulatory normotension (72.0%) and 67 with isolated nocturnal hypertension (28.0%). Compared with normotensive participants, patients with isolated nocturnal hypertension were older (median [interquartile range], 55 [45.5–63] vs. 52 [40.75–60] years; $p = 0.034$) and more frequently male (50.7% vs. 27.3%; $p < 0.001$). The proportion with diabetes mellitus did not differ significantly (23.9% vs. 17.4%; $p = 0.257$; Table 1).

Twenty-four-hour, daytime, and nighttime systolic and diastolic blood pressures were higher in the isolated nocturnal hypertension group (all $p < 0.001$). Median nighttime systolic blood pressure was 124 (121–130) versus 101 (94.25–110) mmHg, and median nighttime diastolic blood pressure was 71 (66–74) versus 55 (49–60.75) mmHg. Reverse dipping was more frequent in patients with isolated nocturnal hypertension (44.8% vs. 11.0%), as was non-dipping (47.8% vs. 23.3%); extreme dipping was observed only in the normotensive group (0.0% vs. 19.2%; all $p < 0.001$).

### FIB-4 index and laboratory findings

The FIB-4 index was higher in patients with isolated nocturnal hypertension than in normotensive participants [median (interquartile range), 1.390 (1.000–2.670) vs. 0.785 (0.545–1.043); $p < 0.001$]. Patients with isolated nocturnal hypertension also had higher aspartate aminotransferase levels [25 (20–35) vs. 20 (17–24) U/L] and lower platelet counts [221 (185–280) vs. 287 (249–328.75) $\times 10^9$/L] (both $p < 0.001$), whereas alanine aminotransferase levels did not differ significantly ($p = 0.503$). C-reactive protein levels were higher in the isolated nocturnal hypertension group [3.60 (2.70–8.65) vs. 2.90 (1.525–5.075) mg/L; $p = 0.002$]. Urea, creatinine, and potassium levels were also higher ($p = 0.011$, $p = 0.009$, and $p = 0.036$, respectively). No statistically significant differences were observed in estimated glomerular

filtration rate, albumin, sodium, thyroid-stimulating hormone, white blood cell count, or hemoglobin (all $p > 0.05$).

**Association between age and FIB-4**

Age was positively correlated with FIB-4 (Spearman $\rho = 0.628$; $p < 0.001$). In the auxiliary analysis containing age and FIB-4 as predictors, tolerance was 0.740 and VIF was 1.351 for each variable.

**Association between FIB-4 and isolated nocturnal hypertension**

In univariable analysis, each 1-unit increase in FIB-4 was associated with higher odds of isolated nocturnal hypertension (OR, 7.146; 95% CI, 3.872–13.187; $p < 0.001$). Age was also positively associated with the outcome (OR per year, 1.024; 95% CI, 1.004–1.044; $p = 0.021$), as were CRP, urea, creatinine, and male sex. The association with potassium did not reach statistical significance (OR, 2.042; 95% CI, 0.948–4.402; $p = 0.068$; Table 2).

FIB-4 remained associated with isolated nocturnal hypertension in Model 1, which adjusted for CRP, urea, and creatinine (adjusted OR, 7.068; 95% CI, 3.588–13.925; $p < 0.001$), and in Model 2, which additionally adjusted for sex (adjusted OR, 6.713; 95% CI, 3.412–13.209; $p < 0.001$). CRP remained associated with the outcome in both models, whereas urea and creatinine were not significantly associated with the outcome; the association with male sex was also not significant in Model 2.

After age was added in Model 3, FIB-4 remained associated with higher odds of isolated nocturnal hypertension (adjusted OR per 1-unit increase, 11.431; 95% CI, 4.827–27.070; $p < 0.001$). CRP also remained associated with the outcome (adjusted OR per 1 mg/L, 1.084; 95% CI, 1.022–1.149; $p = 0.007$). In contrast to its positive univariable association, age was inversely associated with the outcome in Model 3 (adjusted OR per year, 0.956; 95% CI, 0.924–0.988; $p = 0.008$). Urea (adjusted OR, 1.010; 95% CI, 0.955–1.068; $p = 0.729$), creatinine

(adjusted OR, 2.530; 95% CI, 0.222–28.868; p = 0.455), and male sex (adjusted OR, 0.686; 95% CI, 0.282–1.671; p = 0.407) were not statistically significant (Table 2).

The Hosmer–Lemeshow test indicated acceptable model fit for both Model 2 ($\chi^2 = 6.720$; p = 0.567) and Model 3 ($\chi^2 = 8.412$; p = 0.394).The Nagelkerke $R^2$ for Model 3 was 0.485, indicating that the final model accounted for a substantial proportion of the variance in isolated nocturnal hypertension.

Model 2 additionally included sex; Model 3 additionally included age. ORs for continuous variables are per 1-unit increase (age, years; CRP, mg/L; urea and creatinine, mg/dL; potassium, mmol/L). Female sex is the reference category. Each cell reports OR (95% CI) and p value. Dashes indicate variables not included in that model.

**Receiver operating characteristic analysis**

The unadjusted ROC analysis of FIB-4 alone yielded an AUC of 0.791 (standard error, 0.035; 95% CI, 0.723–0.859; p < 0.001). The sample-derived cutoff of 0.975 provided 77.6% sensitivity and 70.9% specificity, with a Youden index of 0.485 (Table 3 and Figure 1). These estimates describe FIB-4 alone and do not represent the performance of the age-adjusted regression model.

## Discussion

### Principal findings

In this retrospective cross-sectional study of untreated adults with normal daytime ambulatory blood pressure, higher FIB-4 values were associated with isolated nocturnal hypertension after adjustment for age, CRP, urea, creatinine, and sex. The age-adjusted OR was 11.431 per 1-unit increase in FIB-4 (95% CI, 4.827–27.070). CRP also remained associated with the outcome.

The main finding is the persistence of the FIB-4 association after explicit adjustment for age in a phenotype defined by elevated absolute nighttime blood pressure despite normal daytime values. This extends the question beyond abnormal nocturnal dipping to a phenotype that daytime measurements alone may miss.

**Relationship to previous evidence**

The most directly relevant comparison is the study by Küçük and Arslan, which reported higher FIB-4 values in non-dippers than in dippers and normotensive controls [12]. Non-dipping describes the proportional nighttime decline, whereas isolated nocturnal hypertension is defined by absolute nighttime thresholds. Similarly, studies linking hepatosteatosis to abnormal nocturnal blood pressure patterns provide related evidence [8, 9], but the classification used by Astan et al. incorporated a night-to-day ratio greater than 1.0, corresponding to reverse dipping, in addition to nighttime blood pressure thresholds [9]. Our findings therefore concern a distinct, although overlapping, blood pressure phenotype. Differences in definitions and participant selection also limit direct comparisons of FIB-4 cutoffs and discrimination across studies.

Broader evidence links hepatic indices and liver abnormalities with hypertension. The KoGES-ARIRANG study associated fatty liver index with incident hypertension [6]; Fu et al. examined hypertension in relation to elastography-defined steatosis and fibrosis [13]; and Suzuki et al. linked hypertension to a high FIB-4 index in individuals with hepatic steatosis [14]. These studies provide context for the present association, but our participants were not characterized by liver imaging or elastography. Studies of FIB-4 and its interaction with metabolic indices provide additional cardiovascular context [11, 15]. Ng et al. also associated hypertension with higher all-cause and cardiovascular mortality in individuals with NAFLD [16]. These findings do not establish prognostic value for the cross-sectional nocturnal blood pressure outcome examined here.

The proportion with isolated nocturnal hypertension in our sample should also be interpreted in light of participant selection. Unlike population-based and broader referral studies [4, 5], our comparison was restricted to isolated nocturnal hypertension and ambulatory normotension. The observed proportion of 28.0% is therefore a feature of the selected sample rather than an estimate of population prevalence.

**Interpretation of age adjustment**

Age requires particular attention because it is both a potential confounder and a component of FIB-4. Age and FIB-4 were positively correlated (Spearman $\rho = 0.628$), while the reported tolerance of 0.740 and VIF of 1.351 did not suggest substantial linear collinearity in the two-predictor diagnostic analysis. Persistence of the FIB-4 association in Model 3 indicates that it was not eliminated by including age as a separate linear covariate. It does not, however, fully disentangle the contribution of age from those of the laboratory components.

The age coefficient changed from a positive univariable association to an inverse association in Model 3. Because age is embedded in FIB-4, the latter coefficient describes age at a fixed value of the composite index and the other covariates. This conditional comparison may produce a suppression pattern and should not be interpreted as a protective biological effect of aging. The larger FIB-4 OR after age adjustment similarly does not demonstrate improved prediction. Its wide confidence interval indicates uncertainty in the effect size, and ORs for FIB-4, age, and CRP cannot be ranked directly because their measurement scales differ. Analyses of the individual laboratory components and nonlinear associations would help clarify these findings.

**Biological interpretation**

Shared metabolic and autonomic pathways offer plausible explanations for the observed association. Evidence linking fatty liver index to incident hypertension [6] and sympathetic activity to nocturnal dipping patterns [17, 18] supports investigating these pathways. Sleep-

disordered breathing may also contribute, given its association with abnormal dipping phenotypes [19]. However, hepatic steatosis, insulin resistance, autonomic function, and sleep apnea were not assessed in this cohort; these explanations remain hypotheses rather than mechanisms demonstrated by our data.

The concurrent association of CRP with isolated nocturnal hypertension suggests an inflammatory correlate, but does not establish mediation of the FIB-4 association. Evidence from other dipping phenotypes is not uniform: one study reported differences in several blood cell-derived inflammatory indices without a corresponding CRP difference [20]. Higher AST and lower platelet counts in our isolated nocturnal hypertension group also contribute directly to higher FIB-4 values. Thus, the index may reflect a combination of age and laboratory characteristics, and should not be taken as evidence of hepatic fibrosis in this population.

**Clinical relevance**

FIB-4 alone showed moderate discrimination (AUC, 0.791), with 77.6% sensitivity and 70.9% specificity at the sample-derived cutoff of 0.975. Its availability from routine data makes it a candidate for research on selecting patients for ABPM. However, these estimates were unadjusted and derived in the same sample used to select the cutoff; they neither describe Model 3 performance nor establish added value beyond age and other clinical factors. The current findings do not support using this threshold to diagnose isolated nocturnal hypertension or guide treatment. A clinically useful role would require comparison of clinical models with and without FIB-4, independent validation, and assessment of the consequences of the resulting ABPM referrals.

**Strengths and limitations**

Strengths include ABPM-based phenotype classification, a uniform measurement schedule, same-day laboratory testing, and explicit evaluation of age in sequential regression models. Several limitations affect interpretation. The retrospective cross-sectional design prevents

assessment of temporal sequence and causality. The single-center referral setting and restrictive eligibility criteria may limit generalizability, while unmeasured factors, including sleep apnea, sleep quality, physical activity, and dietary sodium intake, leave scope for residual confounding. Absence of liver imaging, elastography, or histology prevents attribution of the findings to hepatic fibrosis. Fixed clock intervals and a single ABPM recording may also affect phenotype classification.

Model uncertainty is another limitation. Model 3 included six predictors with 67 outcome events, and some estimates had wide confidence intervals. Collinearity diagnostics were limited to age and FIB-4, and the functional form of continuous predictors was not assessed in the available analyses. Although internal validation was not performed, formal goodness-of-fit testing supported the statistical calibration and acceptable fit of the age-adjusted model (Model 3). These limitations warrant confirmation of the adjusted association and its stability before a predictive application is considered.

**Conclusions**

Higher FIB-4 values were associated with isolated nocturnal hypertension in adults with normal daytime ambulatory blood pressure, and the association persisted after adjustment for age and other included covariates. This finding supports further investigation of FIB-4 in relation to nocturnal blood pressure abnormalities. Its incremental predictive value and clinical utility remain to be established.

**List of abbreviations**

ABPM, ambulatory blood pressure monitoring; ALT, alanine aminotransferase; AST, aspartate aminotransferase; AUC, area under the curve; CI, confidence interval; CRP, C-reactive protein; DBP, diastolic blood pressure; eGFR, estimated glomerular filtration rate; FIB-4, fibrosis-4; HCV, hepatitis C virus; HIV, human immunodeficiency virus; NAFLD, nonalcoholic fatty

liver disease; OR, odds ratio; ROC, receiver operating characteristic; SBP, systolic blood pressure; VIF, variance inflation factor.

## Declarations

### Ethics approval and consent to participate

The study was approved by the Karamanoğlu Mehmetbey University Ethics Committee on 30 September 2025 (approval number: E-11095095-050.04-286695). The requirement for informed consent was waived by the ethics committee. Patient confidentiality was maintained throughout data collection and analysis.

### Consent for publication

Not applicable.

### Availability of data and materials

The de-identified data supporting the findings of this study are available from the corresponding author upon reasonable request.

### Competing interests

The authors declare that they have no competing interests.

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### Authors' contributions

MM conceptualized the study. MM and CAC curated the data. MM and OK developed the methodology. HOI contributed to formal analysis. OK supervised the study. MM and DYO reviewed and edited the manuscript. All authors read and approved the final manuscript and agree to be accountable for their contributions.

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## Tables and Figure Legends

**Table 1.** Participant characteristics according to nocturnal blood pressure status

**Table 2.** Logistic regression analyses of isolated nocturnal hypertension

**Table 3.** Unadjusted receiver operating characteristic analysis of FIB-4 alone

**Figure 1.** Unadjusted receiver operating characteristic curve of FIB-4 alone for distinguishing isolated nocturnal hypertension from normotension. The area under the curve was 0.791 (95% CI, 0.723–0.859; $p < 0.001$). The diagonal line represents chance discrimination. This curve does not represent Model 3.

## Figures

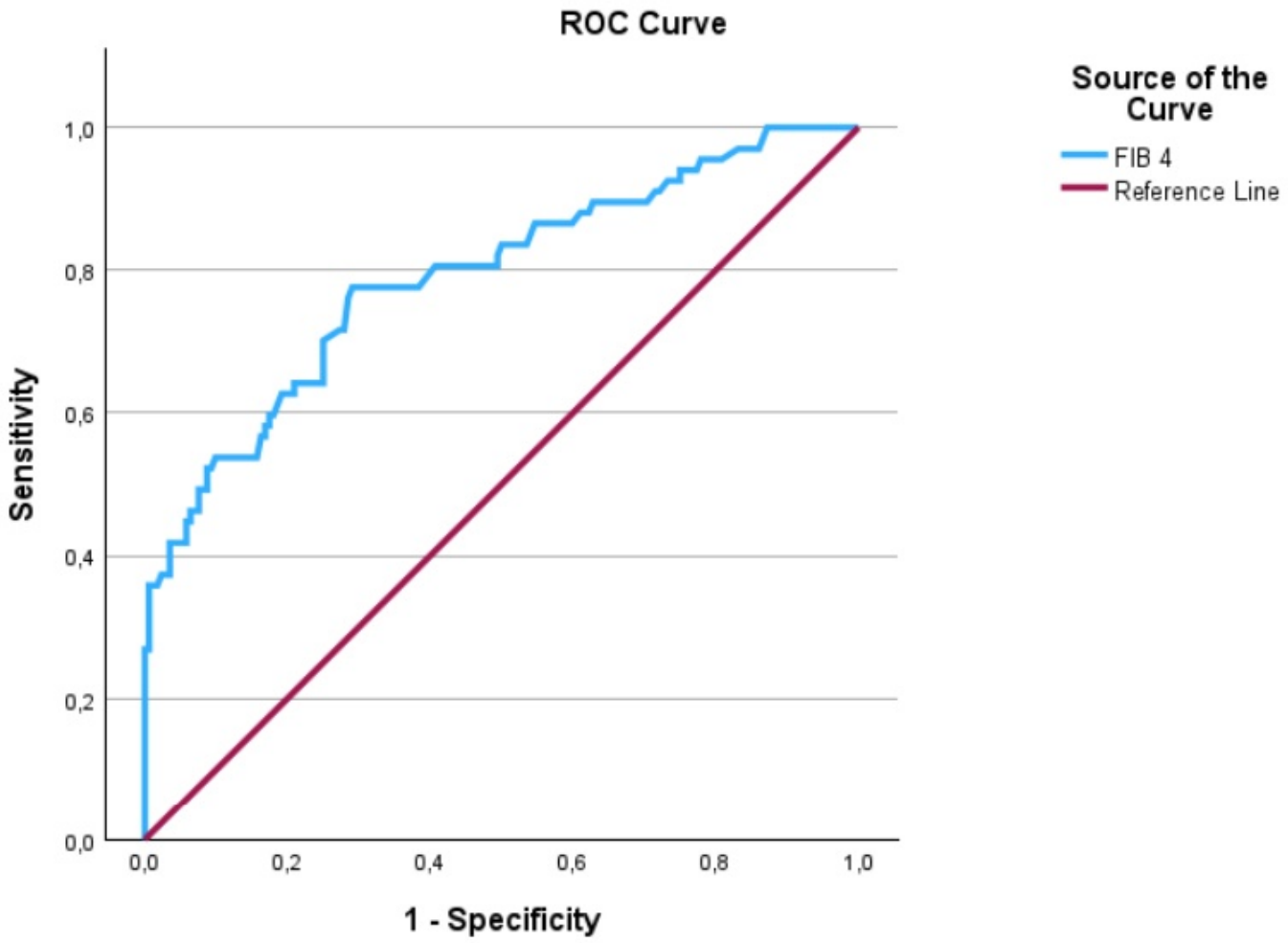


Figure 1. Unadjusted receiver operating characteristic curve of FIB-4 alone for distinguishing isolated nocturnal hypertension from normotension. The area under the curve was 0.791 (95% CI, 0.723–0.859; $p < 0.001$). The diagonal line represents chance discrimination. This curve does not represent Model 3.

**Figure 1**

See image above for figure legend.

## Supplementary Files

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