Hypertension and its determinants in Abu Dhabi population: A retrospective cohort study

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Background: Preventing high blood pressure and its complications requires identifying its risk factors. This study aims to assess predictors of hypertension and its associated complications among Emirati adults in Abu Dhabi, the United Arab Emirates (UAE).

Methods: This retrospective cohort study was conducted by retrieving data from electronic medical records for adult Emirati nationals who participated in a national cardiovascular screening program between 2011 and 2013. The total study cohort comprised 8456 Emirati adults (aged 18 years and above) and 4095 females and 4361 males. The average follow-up period was 9.2 years, with a maximum of 12 years.

Results: The age-adjusted hypertension prevalence in Abu Dhabi increased from 24.5% at baseline to 35.2% in 2023. Among those who were free from hypertension at screening, 835 subjects (12.3%) were newly diagnosed with hypertension during the follow-up period. At baseline, 61.8% of hypertensives were considered to have controlled BP, which increased to 74.3% after the study period.

Using Cox regression, the hypertension prediction model developed for the Emirati population of Abu Dhabi Emirate included age (p-value <0.001, HR 1.051, 95%CI: 1.046-1.056), systolic blood pressure (SBP) (p-value <0.001, HR 1.017, 95%CI: 1.011-1.023) and diastolic blood pressure (DBP) (p-value <0.001, HR 1.029, 95%CI: 1.02-1.037), glycated hemoglobin (p<0.001, HR 1.132, 95%CI: 1.077-1.191), and high-density lipoprotein (HDL) cholesterol (p-value <0.001, HR 0.662, 95%CI: 0.526-0.832). This study's model for predicting hypertension performed well with a c-statistic of 0.803 (95%CI: 0.786-0.819). Using survival analysis (Kaplan-Meier), higher levels of blood pressure, stage 1, 2, and hypertensive crisis were associated with more cardiovascular events and mortality during follow-up.

Conclusion: The prevalence of hypertension in the Abu Dhabi Emirate is high and increases with age and calendar time. Targeting the model-derived predictors of hypertension may prevent or control hypertension progression. This study informs patient care and policymakers on how to decrease hypertension incidence, complications, and mortality.

Biography

Basil Yahia Al Hashaikeh, a Family Medicine resident at AHS SEHA in Al Ain city, UAE, is actively engaged in advancing medical research. He is participating in publishing this retrospective cohort study, contributing valuable insights to the field of family medicine. His work reflects a commitment to improving patient outcomes and fostering evidence-based practices in healthcare.