0014

Role of CHA 2 DS 2-VASc score in predicting new-onset atrial fibrillation in patients with type 2 diabetes mellitus with and without hyperosmolar hyperglycaemic state: real-world data from a nationwide cohort

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Abstract

Purpose: The objective of the current study was to explore the role of CHA2DS2-VASc score in predicting incidence of atrial fibrillation (AF) in patients with type 2 diabetes mellitus (DM). Furthermore, the use of the CHA2DS2-VASc score for stratifying new-onset AF risk in patients with DM and with/without hyperosmolar hyperglycaemic state (HHS) was also compared.

Methods: The study subjects were identified from Longitudinal Health Insurance Database provided by the National Health Research Institutes. The patients with DM were divided into two groups based on a history of HHS or not. The predictive ability of CHA2DS2-VASc score for stratifying new-onset AF risk in the two groups was calculated using the area under the curve of receiver-operating characteristic (AUROC).

Results: The present study involved a total of 69 530 patients with type 2 DM. Among them, 1558 patients had a history of HHS, whereas 67 972 patients did not. The AUROC of the CHA2DS2-VASc score as a predictor of incident AF in patients with DM and with/without HHS was 0.67 (95% CI 0.59 to 0.75) and 0.71 (95% CI 0.70 to 0.72), respectively.

Conclusions: To conclude, we reported for the first time on the assessment of CHA2DS2-VASc score for incident AF risk discrimination in patients with type 2 DM. We further found that the predictive ability of the CHA2DS2-VASc score was attenuated in patients with type 2 DM and with HHS in comparison with those without HHS.

Keywords: CHA2DS2-VASc score; atrial fibrillation; diabetes mellitus; hyperosmolar hyperglycemic state.