Abstract: P5672
Diagnostic accuracy and clinical utility of point-of-care ultrasound among syncope patients in the emergency department

Authors:
E. Pivetta¹ , F. Moretto², G. Bianchi¹ , S. Masellis², F. Bovaro², M. Manasievska², M.M. Maule², E. Lupia²,¹ Hospital Citta Della Salute e della Scienza di Torino - Turin - Italy , ²University of Turin - Turin - Italy ,

Topic(s):
Syncope and Bradycardia - Epidemiology, Prognosis, Outcome: Prognosis and Risk Stratification

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Background/Introduction: Syncope is still a challenge for risk stratification in the Emergency Department (ED), and the indication to discharge is not well established for all patients.

Purpose: To evaluate diagnostic accuracy and clinical utility of integration of clinical assessment and point-of-care ultrasound (POCUS) in evaluating non high-risk syncopes in the ED.

Methods: This observational prospective cohort study enrolled patients between February 2016 and January 2019.

All adult patients presenting in the ED for a non-high risk syncope were eligible (defined according to the 2015 ESC consensus on management of syncope in the ED). Subject for whom event etiology was identified right after the clinical assessment (i.e. history, physical exam, and EKG) or showing a clinical high risk for short term serious outcomes or refuse to participate in the study were excluded.

After the initial clinical assessment, the physician responsible for patient care was asked to categorize the syncope as low or neither high nor low risk. Immediately after, the same physician performed POCUS, and a new risk assessment, based on the results of both clinical and sonographic findings, was recorded. Thirty days after the ED evaluation, all participants were telephonically followed up by the investigators in order to assess the risk of short-term outcomes as defined in the San Francisco Syncope Rule cohorts. Both diagnostic accuracy, defined as sensitivity (SE) and specificity (SPE), and clinical utility, evaluated as net reclassification index (NRI) and net benefit were evaluated for clinical and POCUS-integrated assessment.

Results: A total of 415 patients with a syncope were eligible. Of these, 194 were enrolled (107 women - 55.2%). Median age was 63 years (interquartile range, IQR, 30 years). During the follow up, 21 patients experienced 28 events.

SE and SPE of the clinical evaluation were 33.3% (95% confidence interval, CI, 14.6–57%) and 79.5% (95% CI 72.7–85.3%), and they were 42.9% (95% CI 21.8–66%), and 92.4% (95% CI 87.4–95.9) for the POCUS-integrated evaluation (p<0.01 for SE and 0.05 for SPE).

NRI for events and non-events during follow up was 9.5% and 12.7%, respectively.

Using the prevalence of events in our cohort (10.8%) as the threshold probability, the use of the POCUS-integrated approach would reduce the diagnostic error of the clinical evaluation by 4.6 cases/100 patients.

The median time between clinical and POCUS-integrated evaluation was 15 minutes (iqr 20 minutes).

Conclusion: The results of our study suggest that the integration of the clinical evaluation with POCUS for patients presenting to the ED for non high-risk syncope might be able to increase the diagnostic accuracy and the utility of the clinical assessment alone.
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1 Hospital Citta Della Salute e della Scienza di Torino – Turin – Italy, 2 University of Turin – Turin – Italy

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