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CME

Prognosis Among Healthy Individuals Discharged With a Primary Diagnosis of Syncope

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JACC JOURNAL CME

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CME Objective for This Article: At the conclusion of this activity, the learner should be able to examine the risk of major adverse events and death in a nationwide cohort of patients without previous comorbidity admitted for syncope.

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Prognosis Among Healthy Individuals Discharged With a Primary Diagnosis of Syncope

Objectives This study sought to examine the risk of major cardiac adverse events and death in a nationwide cohort of patients without previous comorbidity admitted for syncope.

Background Syncope is a common clinical event, but knowledge of prognosis is not fully elucidated in healthy individuals.

Methods Patients without previous comorbidity admitted for syncope in Denmark from 2001 to 2009 were identified in nationwide administrative registries and matched by sex and age with 5 control subjects from the Danish population. The risk of death or recurrent syncope, implantation of pacemaker or implantable cardioverter-defibrillator, and cardiovascular hospitalization were analyzed with multivariable Cox proportional hazard models.

Results We identified 37,017 patients with a first-time diagnosis of syncope and 185,085 control subjects; their median age was 47 years (interquartile range, 32 to 63 years) and 47% were male. A total of 3,023 (8.2%) and 14,251 (7.1%) deaths occurred in the syncope and the control population, respectively, yielding an event rate of 14.3 per 1,000 person-years (PY) in the syncope population. Multivariable Cox regression analysis demonstrated a significantly increased risk of all-cause mortality (hazard ratio [HR]: 1.06; 95% confidence interval [CI]: 1.02 to 1.10), cardiovascular hospitalization event rate of 26.5 per 1,000 PY (HR: 1.74; 95% CI: 1.68 to 1.80), recurrent syncope event rate of 45.1 per 1,000, stroke event rate of 6.8 per 1,000 PY (HR: 1.35; 95% CI: 1.27 to 1.44), and pacemaker or implantable cardioverter-defibrillator event rate of 4.2 per 1,000 PY (HR: 5.52; 95% CI: 4.67 to 5.73; $p < 0.0001$).

Conclusions The first admission for syncope among healthy individuals significantly predicts the risk of all-cause mortality, stroke, cardiovascular hospitalization, device implantation, and recurrent syncope. (J Am Coll Cardiol 2013;61: 325–32) © 2013 by the American College of Cardiology Foundation

Syncope is a common medical problem (1–4) that is difficult to evaluate and is associated with a high mortality rate in selected subgroups of patients (5–11).

The primary purpose of the evaluation of the patient with syncope is to determine whether the patient is at increased risk and implement preventive measures. Previous studies have shown conflicting results regarding the risk of death, and no data reflect the risk in syncope patients who are otherwise healthy (i.e., no known cardiovascular disease or comorbidity). The prognosis given in the different studies varies significantly and depends on the setting and whether it is the prognosis in the general population, in patients examined in the emergency department (ED), or in patients admitted to hospital with syncope (5,8–10,12–20).

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In addition, all studies had 1 thing in common: there was a very high rate of unexplained syncope, which questions the reliability of the true outcomes of syncope when dividing into categories of etiology.

There is still a lack of evidence concerning the risk of patients with syncope and no known comorbidity. To our knowledge, no study has estimated mortality in a (pre)defined subset of otherwise healthy syncope patients discharged from hospital or sent home from the ED and compared this with a representative background population. We investigated nationwide registries of supposedly healthy syncope patients and estimated their prognosis and time to future cardiac events.

Methods

A personal and unique civil registration number (CPR number) is assigned to all residents in Denmark that enables linkage of nationwide administrative registries on the individual level. Information on all dispensed prescriptions from Danish pharmacies since 1995 is registered according to the Anatomical Therapeutic Chemical system in the Danish Register of Medicinal Products (21). We obtained information on hospitalization and comorbidities from the Danish National Patient Register, where information on all hospital admissions in Denmark has been stored since 1978 (22). At discharge, each hospital admission is coded with 1 primary diagnosis and, if appropriate, 1 or more secondary diagnoses according to the International Classification of Diseases (ICD), before 1994, the 8th revision, and from 1994 to date, the 10th revision (ICD-10). Demographic information on date of birth, age, sex, and vital status were obtained from the Danish Civil Register.

Study population. From the Danish National Patient Register, we identified all Danish residents with a first-time admission to hospital or ED visit for syncope when classified as the primary discharge diagnosis (ICD-10 code R55.9) between January 1, 2001, and December 31, 2009. All hospital admissions, ED contacts, and nonacute referrals (i.e., outpatients were included but each unique patient was only recorded once). R55.9 refers to "syncope and collapse." Patients seen in the ED, given the discharge diagnosis of R55.9, and immediately hospitalized were included if they