Impaired detection of Primary Cardiac Arrhythmia Syndromes through cascade Screening and electronic medical record review (PICASSO): Substudy of beta-blocker usage patterns

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Background

- Congenital long QT syndrome (LQTS), Brugada syndrome, and Arrhythmogenic Right Ventricular Cardiomyopathy (ARVC) are primary inherited arrhythmia syndromes that are a leading cause of sudden cardiac death (SCD) in patients younger than 40 years of age.
- Current guidelines recommend that patients with or at risk of an inherited arrhythmia and sudden cardiac death syndromes receive beta-blockers without intrinsic sympathomimetic activity (nadolol or sustained-release propranolol) to reduce the risk of life-threatening arrhythmic events.

Objectives

Primary Objective
- To determine the rate of adherence to guideline recommendations for beta blocker therapy: HR 0.40 (95% CI 0.16-0.98)
- It is estimated that approximately 30-50 patients will meet study inclusion criteria

Secondary Objectives
- Specific types of beta blockers prescribed
- Dosage of beta blockers prescribed
- Classes of QT-prolonging medications prescribed
- Classes of QT-prolonging medications prescribed

Methods

Study Design:
- IRB Approved, Retrospective, single center, cohort study
- Unique patients evaluated at Duke University Health System between January 1, 2009 and November 11, 2011
- All potential subjects for inclusion will be identified via a query of the Duke Enterprise Data Unified Content Explorer (DEDUCE), ECG, and MRI databases using relevant ICD-9 codes

Statistical Considerations

Primary Endpoint
- Rate of adherence to guideline recommendations for beta blocker therapy (nadolol, propranolol)

Secondary Endpoints
- Specific types of beta blockers prescribed
- Dosage of beta blockers prescribed
- Classes of QT-prolonging medications prescribed

Sample Size
- It is estimated that approximately 30-50 patients will meet study inclusion criteria

Statistical Analysis
- Descriptive statistics of the study population will be performed
- Chi-square test and t-tests may be used for comparisons, if applicable

Data Collection

The following information will be obtained from DEDUCE and electronic medical records:
- Patient demographics (age, gender, race)
- Height (m) and weight (kg)
- Concomitant medication use
- Primary arrhythmia diagnosis
- Arrhythmia history (personal, family history of sudden cardiac death)
- Presence of implanted cardioverter defibrillator
- Concomitant cardiovascular disease
- Medications
  - Beta blocker (specific agent, dosage)
  - Antiarrhythmic therapy
  - QT-prolonging medications (specific agent, duration)

Data collection is in progress.

References


Disclosures

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