"INAPPROPRIATE SINUS TACHYCARDIA: A RETROSPECTIVE ANALYSIS OF A SINGLE CENTER LARGE COHORT YIELDING NOVEL CLINICAL DIAGNOSTIC CRITERIA"

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RESEARCH QUESTIONS

1) Can we determine specific diagnostic criteria using Holter monitor data to identify patients suspected to have IST?

2) Are there any consistent demographics or components of a patient's history that may help clinicians predict or identify IST in patients that fit the clinical picture?

BACKGROUND

Patients with IST reportedly have an unexplained upregulation of resting heart rate to over 100 bpm, with an average HR of at least 90 bpm over a 24-hr period. This is often accompanied by distressing symptoms that can greatly impact patients' quality of life.

While literature is beginning to reveal promising data to help us understand IST, there are currently few existing large cohort studies that have analyzed trends in cardiac rhythm over time or the potential for trends in patient history or demographics that could help predict or diagnose IST.

METHODS

This is a retrospective cohort chart review study in which patients found to meet criteria for IST had their clinical documents reviewed and that data compiled. While the clinical cohort analyzed was over 500 patients, the study population was narrowed to 205 patients. Using the electronic medical record at a single site, each study patient had their Holter monitor results analyzed. Additionally, demographics, history, and certain comorbidities were also collected and analyzed.

Major Findings

1) Inappropriate sinus tachycardia (IST) mostly affects **females** and may affect **middle-aged** patients more commonly than previously reported.

2) Common major **comorbidities** and **obesity** may be more prevalent in IST patients than other studies suggest.

3) The **upregulation of HR in IST patients may not necessarily be as dramatic** as previously thought, which should lead future studies to **reconsider the most popular diagnostic criteria** for IST.

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RESULTS

Of the patients in the study cohort, 82% were female, with an average age of 49 and an average BMI of 30.4. For race and ethnicity, 82% of patients were White, 9% were Black, and 8% were Hispanic. For history and comorbidities, 24% had a history of tobacco use, 18% had diabetes, 28% had hyperlipidemia, and 44% had hypertension; 25% were being effectively treated with ivabradine. For Holter results, the mean average HR was 87 bpm, mean maximum HR was 146 bpm, mean minimum HR was 58 bpm, mean daytime HR was 93 bpm, mean nighttime HR was 83 bpm, mean % of time in sinus tachycardia was 22%, mean PVC burden was 0.55%, and mean PAC burden was 0.78%.

FUTURE DIRECTIONS

While the literature surrounding clinical presentation and epidemiology is quickly revealing promising data to help us understand IST, the underlying pathophysiological mechanism of IST is proving to be much more challenging to elucidate, though there have been several theories proposed. Future research should focus on trying to better understand what causes IST, as that would likely help to develop better detection, prevention, and treatment strategies.

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For a full list of references and cited works, please scan the QR code to the left.