

COMPARISON OF OUTCOME OF NORMAL VERSUS RAISED CARDIAC TROPONIN IN PATIENTS WITH SUPRAVENTRICULAR TACHYARRHYTHMIA

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ABSTRACT:

BACKGROUND:

Acute coronary syndromes encompass a wide range of clinical disorders, ranging from unstable angina pectoris to acute ST-elevation myocardial infarction. Chest pain is typically the primary manifestation of atherosclerotic heart disease. However, accurately determining the origin of chest pain can be difficult, particularly in the emergency department, due to the vague manner in which some patients describe their symptoms.

AIMS & OBJECTIVE:

To evaluate the results of patients with supraventricular tachyarrhythmia who have normal levels of cardiac troponin with those who have elevated levels. Supraventricular tachycardia (SVT) is the predominant category of abnormal heart rhythms in adults.

MATERIAL & METHODS:

Total 234 patients were enrolled from the Department of Emergency. The participants were categorized into two groups i.e, Group-A consisted of individuals with normal troponin levels and Group-B consisted of individuals with elevated troponin levels. The primary diagnosis of tachyarrhythmia were encompass supraventricular tachycardia (SVT) was verified using a 12-lead ECG. The analysis of cTnI levels was done using the identical immunoassay techniques (cTnI-Ultra Siemens) at the exact same facility. Cardiac troponin I (cTnI) levels were assessed upon admission and again 6 hours later. The study measured the readmission for heart failure and myocardial infarction. The determination of qualitative data such as gender, heart failure admission, and myocardial infarction was accomplished through the utilization of frequency and percentages. On the other hand, the determination of quantitative data such as age, blood pressure, and troponin levels was achieved by employing mean and standard deviation. The chi-square test was employed to compare the outcome in both groups. A p-value less than or equal to 0.05 was considered statistically significant.

RESULTS:

In Group-A (Normal Troponin Level), the mean age of participants was 46.96 ± 12.06 , while in Group-B (Raised Troponin Level), the mean age was 56.97 ± 11.38 . The current research included 133 males, accounting for 56.8% of the total enrollment, and 101 females, accounting for 43.2%. Upon admission, the research participants' vital signs were recorded. In group A, the heart rate (bpm) was measured to be 88.11 ± 30.21 , while in group B it was 90.23 ± 28.43 . The systolic blood pressure (mmHg) in group A was 143.22 ± 5.00 , whereas in group B it was 147.67 ± 9.78 . The SaO₂ levels were observed to be 63.21 ± 0.00 in group A and 60.89 ± 0.56 in group B, with p-values of 0.001 and 0.000 respectively. After 30 days, the follow-up assessment of the research participants found that there was one case (0.9%) of re-admission for myocardial infarction in both Group A and Group B. The p-value of 0.751 indicated that this difference was not statistically significant. The re-admission rate for heart failure (HF) was 0% in Group-A but it was 4.30% in Group-B, with a significant p-value of 0.03.

CONCLUSION:

Elevated levels of cardiac troponin may not reliably indicate the occurrence of complications such as readmission for myocardial infarction and heart failure in individuals with supraventricular tachycardia. Physicians should exercise caution when interpreting troponin test results for this particular group of patients.

KEY WORDS:

Raised Cardiac Troponin, Supraventricular Tachyarrhythmia, SVT, HF

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Author's Contribution: **AY:** Principal author & concept of study. **IM:** Helped in conducting study. **AN:** Helped in data analysis.

NM: Helped in drafting. **SS:** Helped in interpretation. **SN:** Helped in questionnaire.

INTRODUCTION

Tachyarrhythmias, defined as abnormal heart rhythms with a ventricular rate above 100 beats per minute, frequently result in symptoms and prompt individuals to seek medical care at outdoor clinics or the emergency room. Tachyarrhythmia can manifest with symptoms such as shock, hypotension, cardiac insufficiency, dyspnea, angina, acute myocardial infarction, and palpitations.¹ When evaluating a patient with symptoms of a fast and irregular heartbeat, it is crucial to perform a 12-lead electrocardiogram (ECG) as part of the initial assessment of the patient's clinical condition.

If the patient is encountering hemodynamic

instability, it may be more beneficial to get only a rhythm strip prior to doing urgent angiography, rather than delaying for a 12-lead ECG. Occasionally, the narrow complex supraventricular tachycardia (SVT) rhythms may present as a wide complex due to aberrant conduction or conduction through an auxiliary channel.² When stable patients have a wide complex tachycardia (WCT) that has already been determined to be supraventricular tachycardia (SVT), the initial approach to their care is the same as that for SVT with a small QRS complex.³ The presence of heart troponin I (cTnI) can only be detected in the heart tissue of adult individuals.⁴

Cardiac troponin I (cTnI) is an exceedingly

sensitive and specific biomarker that serves as an indicator of heart injury. It plays a significant role in the diagnosis of persons with acute coronary syndromes (ACS).⁵ Nevertheless, it is crucial to acknowledge that an elevated concentration of cTnI does not automatically imply the existence of Acute Coronary Syndrome (ACS). Increased levels of cardiac troponin I (cTnI) in patients with normal coronary arteries can be ascribed to several distinct illnesses, such as congestive heart failure, myocarditis, stroke, acute pulmonary embolism, and renal insufficiency.⁶

Since 2003, there have been reports indicating elevated troponin levels in specific patients diagnosed with paroxysmal supraventricular tachycardia (PSVT).⁷ This marker is used in combination with indicators of ischemia, with chest pain being a common symptom.⁸ However, certain demographic groups, such as the elderly, those with diabetes, and female patients, may display atypical symptoms, which could lead to a less favorable prognosis. Troponin testing is performed in these populations when there is a suspicion of acute coronary syndrome (ACS).⁹

Consequently, it is customary for patients who are admitted to the emergency department (ED) to have cTnI determination, regardless of whether they show any symptoms relating to the heart, such as chest tightness. Cardiac arrhythmias are commonly observed in the Emergency Department and provide a strong reason to evaluate cTnI levels. Arrhythmias can occur in situations of Myocardial Infarction and may be followed by symptoms such as chest discomfort, syncope, or palpitations. Therefore, it is standard practice to get the measurement of cTnI to rule out acute coronary syndrome (ACS) in patients who have been diagnosed with tachyarrhythmia as their primary ailment in the emergency department. Elevated levels of cardiac troponin I (cTnI) have been observed in patients with cardiac arrhythmias that are not due to acute coronary syndrome (ACS).¹⁰

OBJECTIVE:

The aim of this study was to examine the clinical outcomes, specifically the

rates of readmission for heart failure and myocardial infarction, between individuals with normal cardiac troponin levels and those with elevated levels, who also had supraventricular tachyarrhythmia.

OPERATIONAL DEFINITION:

Supraventricular Tachyarrhythmia (SVT) SVT, also known as supraventricular tachycardia, is an abnormal heart rhythm that originates at or above the atrioventricular (AV) node. It is characterized by a narrow complex (QRS <120 milliseconds) and a heart rate over 100 beats per minute.

The ECG shows a narrow complex, regular tachycardia with a rate of around 180 to 220 beats per minute, and there is no P wave present on the surface ECG.

Normal Troponin: A troponin level of ≤ 14 pg/ml at 6-8 hours is deemed normal.

Raised Troponin: A troponin level more than 14 pg/ml at 6-8 hours is deemed elevated.

Re-Admission: Re-Admission refers to the act of being admitted to the same hospital within a period of 30 days after being discharged, specifically after experiencing a cardiac episode.¹¹

Re-Myocardial Infarction: often known as re MI, refers to the occurrence of a blocked artery that supplies the heart muscle, as observed on a coronary angiography. This blockage can be caused by either arterial spasm or the creation of an abrupt blood clot due to atherosclerosis. The obstruction leads to tissue damage and a persistent inability of this section of the heart muscle to contract.

MATERIALS AND METHODS:

This prospective comparative study was conducted at the Emergency Department, Punjab Institute of Cardiology, Jail Road, Lahore over a period of 12 months from September 2020 to March 2021. The sample size of 117 in each group was determined using the following formula, while maintaining a study power of 80% and a significance level of 5%. (Wang et al., 2022).

α = Desired Level of Significance = 5%

$$n = \frac{\left\{ z_{1-\alpha} \sqrt{2\bar{P}(1-\bar{P})} + z_{1-\beta} \sqrt{P_1(1-P_1) + P_2(1-P_2)} \right\}^2}{(P_1 - P_2)^2}$$

= 1.28

β = Desired Power of study = 80%
= 1.96

P1 = Anticipated proportion of MACE in patients with elevated trop I = 36.2%

P2 = Anticipated proportion of MACE in patients with normal trop I = 20.0%

n = calculated total sample size = 234

Non probability purposive sampling technique was used. All patients with supraventricular tachyarrhythmia (according to the operational definition), age from 30 to 70 years of both genders were included in the study. Participants with a previous history of myocardial infarction, history of congestive heart failure, valvular heart disease, prior bypass surgery, or percutaneous coronary intervention, alcohol or utilize intravenous drugs, administration of sympathomimetic medications (such as Ventolin and theophylline), chronic kidney disease, severe medical condition and using anti-arrhythmic medications were excluded from the study.

DATA COLLECTION PROCEDURE:

Taking approval from ethical committee of the institute Ref. No: RTPGME-Research-136 dated September 17, 2020. Total 234 participants who met the inclusion criteria were enrolled in this study from the Department of Emergency. The patients were categorized into two groups as follows. Group A refers to individuals with normal troponin levels, while Group B consists of those with elevated troponin levels.

The primary diagnosis of tachyarrhythmia was determined to be supraventricular tachycardia (SVT), which was verified using a 12-lead ECG. The study included an analysis of demographic variables, comorbidities, and clinical variables such as heart rate, blood pressure (BP), oxygen saturation (SaO₂), laboratory tests (cTnI, hemoglobin, glycerin for blood glucose concentration), main cardiac exploration (echocardiographic variables including LVEF(%), LA diameter (mm), LVH), and exercise stress test.

All measurements of cTnI levels were conducted using the identical immunoassay procedures (cTnI-Ultra Siemens) at the exact same laboratory. Cardiac troponin I (cTnI) levels were measured upon admission and

again 6 hours later. Patients were monitored for the occurrence of re-admission due to heart failure and myocardial infarction during a one-month period. All the data gathered using a pre-established proforma.

Statistical Analysis:

The data was inputted into the statistical package for social sciences (SPSS) v25.0. Qualitative data, such as gender, left ventricular ejection fraction (LVEF), left ventricular hypertrophy (LVH), readmission rates for heart failure, and incidence of myocardial infarction, were analyzed using frequency and percentages. Quantitative data, including age, troponin levels, and left atrial diameter, were analyzed using mean and standard deviation. The Chi-square test was employed to compare the outcome between the two groups. A p-value less than or equal to 0.05 was considered statistically significant.

RESULTS:

The overall average age 51.97 ± 12.71 total 234 patients 117 in each groups. The mean age of Group - A (Normal Troponin Level) participant was 46.96 ± 12.06 while the mean age in Group-B (Raised Troponin Level) was 56.97 ± 11.38 with minimum to maximum age range was 20-80. In this study there were 133(56.8%) males and 101(43.2%) females enrolled in current research. [Table 1]

The clinical characteristics of the patients observed as, hypertensive patients 119(50.9%), Diabetes Mellitus was 73(31.2%) and patients having family history of IHD as 102(43.6%). The clinical symptoms of the patients found as chest pain 61(26.1%), dysnoea was 70(29.9%) and syncope observed in 178(76.1%) patients. [Table 2]

The echocardiography findings of current study was noted as Left Ventricle Ejection Fraction (LVEF) was 62.73 ± 2.97 , Left Atrial Diameter (mm) was 19.76 ± 5.11 and Left Ventricle Hypertrophy (LVH) was 22.89 ± 1.77 found. The findings of laboratory tests of patients observed, cTnI levels at the time of admission and after 6 hours as 17.88 ± 2.56 and 19.76 ± 5.11 respectively, hemoglobin was 13.48 ± 1.41 and glycemia observed as 19.76 ± 5.11 .

Table No.1: Descriptive Statistics with respect to age	
Study Groups	Age (Mean $\pm$ S.D)
Average Age	51.97 $\pm$ 12.71
Group-A: (Normal Troponin Level)	46.96 $\pm$ 12.06
Group-B: (Raised Troponin Level)	56.97 $\pm$ 11.38
Minimum Age	20
Maximum Age	80

Table: 2 Clinical Characteristic and Clinical Symptoms			
		Yes	No
Clinical Characteristic	Hypertension	119(50.9%)	115(49.1%)
	Diabetes Mellitus	73(31.2%)	161(68.8%)
	Family History of IHD	102(43.6%)	132(56.4%)
Clinical Symptoms	Chest Pain	61 (26.1%)	173(73.9%)
	Dyspnea	70(29.9%)	164(70.1%)
	Syncope	178(76.1%)	56(23.9%)

Table 3: Findings of Echocardiography and Laboratory Tests		
		Mean $\pm$ SD
Echocardiography Findings	Left Ventricle Ejection Fraction (LVEF)	62.73 $\pm$ 2.97
	Left Artery Diameter (mm)	19.76 $\pm$ 5.11
	Left Ventricle Hypertrophy(LVH)	22.89 $\pm$ 1.77
Laboratory Test	cTnI levels: (At time of admission)	_____ $\pm$ _____
	cTnI levels: (After 6 hours)	19.76 $\pm$ 5.11
	Hemoglobin	13.48 $\pm$ 1.41
	Glycemia	19.76 $\pm$ 5.11
Vital signs at the time of admission	Heart Rate(bpm)	89.02 $\pm$ 33.78
	Systolic Blood Pressure (mmHg)	145.71 $\pm$ 7.70
	SaO ₂ (%)	64.69%

The vital signs of the research participants at the time of admission noted, the heart rate (bpm) was 89.02 $\pm$ 33.78, Systolic Blood Pressure (mmHg) was 145.71 $\pm$ 7.70 and SaO₂ observed as 64.69%. [Table 3].

(Table 6). In this study, male participants in Group A (Normal Troponin Level) 65(55.6%) and female was 52(44.4%) while compared with Group B (Raised Troponin Level) 68(58.1%) male and 49(41.9%) female respectively with insignificant p-value as 0.396. In current study, hypertensive participants in Group A (Normal Troponin Level) as 64(54.7%) while compared with Group B (Raised Troponin Level) 55(47.0%). Diabetes mellitus was

35(29.9%) compared with other group as 38(32.5%). Patients having family history of IHD was 52(44.4%) and in group B as 50(42.7%) with insignificant p-value as 0.148, 0.389 and 0.448 respectively. Chest pain in participants of Group A (Normal Troponin Level) as 36(30.8%) and in Group B (Raised Troponin level) as 25(21.4%), dysnoea in group A as 79(67.5%) while compared with Group B as 85(72.6%). Syncope was 88(75.2%) in group A compared with group B as 90(76.9%) with insignificant p-value as 0.068, 0.476 and 0.439 respectively. The echocardiography findings of current study was noted as Left Ventricle Ejection Fraction (LVEF) was 63.11 $\pm$ 4.67 in Group A (Normal Troponin

Table 4: Group A and Group B analysis of Clinical history, clinical symptoms, Echo findings, Lab findings, Vital Signs and follow up after 30 days.				
		Group-A (Normal Troponin Level)	Group-B (Raised Troponin Level)	P-value
Gender	Male	65(55.6%)	68(58.1%)	0.396
	Female	52(44.4%)	49(41.9%)	
Clinical History	Hypertension	64(54.7%)	55(47.0%)	0.148
	Diabetes Mellitus	35(29.9%)	38(32.5%)	0.389
	Family History of IHD	52(44.4%)	50(42.7%)	0.448
Clinical Symptoms	Chest Pain	36(30.8%)	25(21.4%)	0.068
	Dyspnoea	79(67.5%)	85(72.6%)	0.476
	Syncope	88(75.2%)	90(76.9%)	0.439
Echocardiography Findings	Left Ventricle Ejection Fraction (LVEF)	63.11 ± 4.67	60.55 ± 3.87	0.044
	Left Atrial Diameter (mm)	18.89 ± 2.32	19.11 ± 6.28	0.001
	Left Ventricle Hypertrophy(LVH)	20.10 ± 0.34	22.78 ± 0.84	0.000
Laboratory Test	cTnI levels: (At time of admission)	17.88 ± 2.56	21.89 ± 4.32	0.002
	cTnI levels: (After 6 hours)	17.88 ± 2.56	21.89 ± 4.32	0.001
	Hemoglobin	14.99 ± 3.76	15.90 ± 2.11	0.000
	Glycemia	21.77 ± 4.56	20.89 ± 6.33	0.004
Vital Signs	Heart Rate(bpm)	88.11±30.21	90.23±28.43	0.514
	Systolic Blood Pressure (mmHg)	143.22 ± 5.00	147.67 ± 9.78	0.001
	SaO ₂	63.21±00	60.89±0.56	0.000
Follow Up Assessment of the Patients after 30 Days	Re-admission for Myocardial Infarction (MI)	1(0.9%)	1(0.9%)	0.751
	Re-admission for Heart Failure (HF)	0(0.00%)	5(4.30%)	0.03

Level) while in Group B (Raised Troponin Level) 60.55 ± 3.87, Left Artery Diameter (mm) was 18.89 ± 2.32 in group A and in group B 19.11 ± 6.28, Left Ventricle Hypertrophy (LVH) patients was 20.10 ± 0.34 in group A and group B 22.78 ± 0.84 with significant p-value 0.044, 0.001 and 0.000 respectively. The findings of laboratory tests of patients observed, cTnI level after 6 hours of admission 17.88 ± 2.56 in Group-A (Normal Troponin Level) and 21.89 ± 4.32 in Group-B (Raised Troponin Level) with significant p-value 0.001. Hemoglobin 14.99 ± 3.76 in group A and 15.90 ± 2.11 in group like glycemia 21.77 ± 4.56 compared with group 20.89 ± 6.33 with p value 0.001 and 0.001 respectively. [Table 4]

The vital signs of the research participants at the time of admission noted, the heart

rate (bpm) was 88.11 ± 30.21 in group A and 90.23 ± 28.43 in group B with p value 0.514, Systolic Blood Pressure (mmHg) was 143.22 ± 5.00 in group A while 147.67 ± 9.78 in group B and SaO₂ observed as 63.21 ± 00 in group A compared with group B 60.89 ± 0.56 with p-value 0.001 and 0.000 respectively. The follow up assessment of the patients after 30 days of the research participants noted, the re-admission for myocardial infarction in Group-A (Normal Troponin Level) group A 1(0.9%) and in Group-B (Raised Troponin Level) 1(0.9%) with insignificant p-value 0.751. re-admission for heart failure (HF) in Group-A (Normal Troponin Level) 0(0.00%) while in Group-B (Normal Troponin Level) 5(4.30%) with significant p-value as 0.03. [Table 4].

DISCUSSION:

The objective of this study was to compare the outcomes of individuals with supraventricular tachyarrhythmia based on their cardiac troponin levels, whether normal or elevated.

The research participants had an average age of 51.97 ± 12.71 . The mean age of individuals in Group-A (Normal Troponin Level) was 46.96 ± 12.06 , while the mean age in Group-B (Raised Troponin Level) was 56.97 ± 11.38 . The age range of participants was from 20 to 80. In Group A, the proportion of male participants with normal troponin levels was 55.6% (65 individuals), while the proportion of female participants was 44.4% (52 individuals). In Group B, the proportion of male participants with raised troponin levels was 58.1% (68 individuals), while the proportion of female participants was 41.9% (49 individuals). The p-value of 0.396 indicates that the difference between the groups is not statistically significant.

Yen et. al.¹² conducted research on 112 patients. The age and proportion of males were identical in both groups. The mean age in group A with positive cTnI was 8.6 ± 5.4 , whereas in group B with negative cTnI it was 10.3 ± 4.7 . Among the male patients, there were 13 (44.8%) in group A and 37 (44.6%) in group B, with p-values of 0.099 and 1.000 respectively, indicating no significant difference.

Ghersin et al.¹³ did a retrospective single-center observational research. This study conducted in 2020, a total of 165 patients were included. The average age of the participants was 55 ± 17 years, and 60% of them were men who had been diagnosed with an acute episode of frequent supraventricular tachyarrhythmia. They investigated the correlation between paroxysmal supraventricular tachycardias (PSVT) and increased levels of cardiac troponin I (cTnI). The study included a total of 165 patients. Among these patients, 53 (39%) had hypertension and 20 (15%) had diabetes mellitus in the Negative cTn group. In the Positive cTn group, 60 (34%) patients had hypertension and 32 (18%) had diabetes mellitus.

In our study, in Group A (Normal

Troponin Level), there were 64 hypertension participants, accounting for 54.7% of the total. In comparison, Group B (Raised Troponin Level) had 55 hypertensive participants, making up 47.0% of the total. The prevalence of diabetes mellitus was 35 (29.9%) in comparison to the other group, which had a prevalence of 38 (32.5%). The prevalence of patients with a family history of ischemic heart disease (IHD) was 52 (44.4%) in group A and 50 (42.7%) in group B. The p-values for the association between family history of IHD and the two groups were 0.148, 0.389, and 0.448, respectively, indicating no significant difference.

The incidence of chest discomfort in people with normal troponin levels (Group A) was 36 (30.8%), whereas in participants with raised troponin levels (Group B) it was 25 (21.4%). Dyspnea was observed in 79 (67.5%) participants in Group A, compared to 85 (72.6%) participants in Group B. The incidence of syncope in group A was 88 (75.2%), whereas in group B it was 90 (76.9%). The p-values for the comparison between the two groups were 0.068, 0.476, and 0.439, respectively, indicating no significant difference.

Yen et. al.¹² examined the outcomes of their research which included 112 patients. Among these patients, those with elevated cTnI levels had a significantly higher incidence of dyspnea complaints compared to those without elevation (27.6% vs. 7.2%, $p = 0.008$).

The echocardiography findings of the current study revealed that the Left Ventricle Ejection Fraction (LVEF) was 63.11 ± 4.67 in Group A (Normal Troponin Level) and 60.55 ± 3.87 in Group B (Raised Troponin Level). The Left Atrial Diameter (mm) was 18.89 ± 2.32 in Group A and 19.11 ± 6.28 in Group B. The presence of Left Ventricle Hypertrophy (LVH) was observed in 20.10 ± 0.34 patients in Group A and 22.78 ± 0.84 patients in Group B, with significant p-values of 0.044, 0.001, and 0.000, respectively.

The laboratory tests revealed that patients in Group-A (Normal Troponin Level) had a cTnI level of 17.88 ± 2.56 after 6 hours of admission, while patients in Group-B

(Raised Troponin Level) had a cTnI level of 21.89 ± 4.32 . The p-value of 0.001 indicates a significant difference between the two groups. The hemoglobin levels were 14.99 ± 3.76 in group A and 15.90 ± 2.11 in group B. The glycemia levels were 21.77 ± 4.56 in group A compared to 20.89 ± 6.33 in group B, with p-values of 0.001 and 0.001, respectively.

In a study Chen et al.¹⁴ in 2023, a total of 124 patients were enrolled. Out of these, 39 patients (31.5%) tested positive for cTnI, whereas 85 patients (68.5%) tested negative for cTnI. Patients who tested positive for cTnI were found to be older ($p = 0.029$) and had a longer duration of hospitalization ($p = 0.023$) compared to those who tested negative for cTnI. A moderate association ($p = 0.656$) was seen between the groups that tested positive and negative for cTnI. The findings indicated that having a previous diagnosis of coronary artery disease was the sole significant independent risk factor for major adverse cardiovascular events (hazard ratio = 4.30; 95% confidence interval 1.41–13.05; $p = 0.010$). The study found that previous episodes of SVT (HR = 3.37; 95% CI 1.53–7.39; $p = 0.002$) and a history of smoking (HR = 2.32; 95% CI 1.03–5.24; $p = 0.043$) were significant independent predictors of SVT recurrence.

Upon admission, the research participants' vital signs were recorded. In group A, the heart rate (bpm) was measured to be 88.11 ± 30.21 , while in group B it was 90.23 ± 28.43 . The systolic blood pressure (mmHg) in group A was 143.22 ± 5.00 , whereas in group B it was 147.67 ± 9.78 . The SaO₂ levels in group A were observed to be 63.21 ± 0.00 , whereas in group B they were 60.89 ± 0.56 . The p-values for the comparison between the two groups were

0.001 and 0.000, respectively.

After 30 days, the follow-up assessment of the research participants revealed that there was one case (0.9%) of re-admission for myocardial infarction in both Group-A (Normal Troponin Level) and Group-B (Raised Troponin Level). The p-value of 0.751 indicated that this difference was not statistically significant. The re-admission rate for heart failure (HF) was 0% in Group-A (Normal Troponin Level), but it was 4.30% in Group-B (Normal Troponin Level), with a significant p-value of 0.03.

A study by Ghersin et al.¹³ following an average follow-up time of 23 ± 7 months, a combined primary event of death, coronary intervention (PCI), or myocardial infarction (MI) was observed in 7 out of 57 patients (12.3%) with positive cTnI levels, while no patients with negative cTnI experienced this result ($p = 0.002$). The Cox proportional hazard model demonstrated that an increased level of cTnI at admission was a significant predictor of negative outcomes, but only in patients who had previously been diagnosed with coronary artery disease (CAD) (hazard ratio = 3.3, $p = 0.05$).¹⁵

CONCLUSION:

Elevated levels of cardiac troponin may not reliably identify the occurrence of complications such as readmission for myocardial infarction and heart failure in individuals with supraventricular tachycardia. Physicians should exercise caution when interpreting troponin test results for this particular group of patients.

STUDY LIMITATION:

The limited sample size of our study was one of its drawbacks, which probably led to a less accurate interpretation of our findings. There may have been a bias in the selection process when enrolling patients in both groups.

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