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Delta of Egypt supra ventricular tachycardia registry

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Abstract
Background: Atrioventricular nodal reentrant tachycardia (AVNRT) was proved to be the commonest type of Supraventricular tachycardia (SVT); being responsible for about sixty percent of cases. The subtypes AVRT in addition to atrial tachycardia is responsible for nearly thirty percent and ten percent of SVT cases, respectively. The aim of registry is to determine patient characteristics, practice patterns, and management strategies of Supra Ventricular Tachycardia in the region of Delta of Egypt using the registry design.
Methods: This was a descriptive study included at least 300 Supra Ventricular Tachycardia Patients who admitted to cardiac centers and hospitals in the region of middle Delta of Egypt. All patients with regular SVT were included in the study.
Results: Regarding to SVT pattern, our study showed that 58% AVNRT, 29.3% AVRT and 12.7% AT. Regarding to ECHO data, our study showed that 193 (64.3%) patients were normal, 49 (16.3%) had CAD, 8 (2.7%) patients had CHD, 39 (13%) patients had LVH and 11 (3.7%) patients had VHD. 270 (90%) patients were managed by pharmacological management while 30 (10%) patients were managed by ablation plus medications.
Conclusion: Close inspection of the ECG in sinus rhythm regarding the initiation, termination and duration of tachycardia, the diagnosis is usually feasible, thus help guiding the management and urgency of treatments entailed, in addition to allowing initial patient counseling for long-term treatment recommendations.

Keywords: Supra ventricular tachycardia, registry, atrioventricular reentrant tachycardia

Introduction
Supraventricular tachycardia (SVT), also referred as paroxysmal SVT, means abnormally rapid heartbeats. In fact, it is a broad term that may include various types of heart rhythm problems (Cardiac arrhythmia) that arise above the ventricle (Supraventricular) in the atria as well as the AVN [1].
It has been proved that AVNRT is the commonest type of tachycardia; being responsible for about sixty percent of cases. The subtypes AVRT in addition to atrial tachycardia is responsible for nearly thirty percent and ten percent of SVT cases, respectively [2]. The incidence of AVNRT is higher in females than males and has a bimodal age distribution with the 1st peak during the 3rd decade and the other one begins in the 6th decade extending to very old age. On the other hand, AVRT incidence is higher in males than females with the mean onset of age at 23y [3].
SVT risk factors include valvular Heart Disease, coronary artery disease, Thyroid Problems, obesity, diabetes mellitus, chronic kidney disease, COPD, Obstructive sleep Apnoea, Hypertrophic cardiomyopathy and after cardiac surgery [4].
Vagal maneuvers are a proper 1st therapeutic option in cases with hemodynamically stable SVT [5]. Several studies have demonstrated about twenty five percent success rate, despite the great variations of the reported rates in the literature (Ranging between 6 percent and fifty four percent). The commonest done maneuvers include Valsalva maneuver in addition to carotid sinus massage [6, 7].
Disease registries play an important part in improving health outcomes by determining patient characteristics, management and adherence of practice guidelines [8]. The aim of registry is to determine patient characteristics, practice patterns, and management strategies of Supra Ventricular Tachycardia in the region of Delta of Egypt using the registry design.

Patients and Methods

This descriptive study included 300 supra ventricular tachycardia patients who admitted to Cardiology department of Tanta University Hospital in Tanta, Cardiology department of Mansoura University Hospital in Mansoura, Cardiology department of Damietta University Hospital in Damietta, Cardiology department of Al-Hussein University Hospital and Al-Sayed Jalal Teaching Hospital in Cairo from October 2020 till March 2021.

Written informed consent was attained from all the subjects included in our registry. The approval of the study was obtained by the Ethics Committee of Faculty of Medicine, Tanta University.

Exclusion criteria were patients from hospitals other than those mentioned above, AF (Atrial Fibrillation) and AFL (Atrial Flutter).

All patients will be subjected to full history taking, analysis of Supra Ventricular Tachycardia, investigations (ECG and Echocardiography), medications during admission and on discharge (Rate control medications, anticoagulant medications, rhythm control medications, and others).

Statistical analysis

Data were analyzed via the Statistical Package of Social Science (SPSS) program for Windows (Standard version 26). The normality of data was 1st assessed by one-sample Kolmogorov-Smirnov test. Qualitative data were described as numbers and percent's. Continuous variables were presented as mean ± SD for normally distributed data.

Results

Table 1 shows demographic data of the studied groups.

Table 1: Demographic data, risk factors and comorbidities in the studied groups

Demographic data		Patients group (n=300)
Age (Years)		57.21±20.03
Age categories	<20 y	21 (7.0%)
	20-30 y	15 (5.0%)
	30-40 y	22 (7.3%)
	40-50 y	30 (10.0%)
	50-60 y	52 (17.3%)
	>60 y	160 (53.3%)
Sex	Male	151 (50.3%)
	Female	149 (49.7%)
Risk factors & comorbidities		
Smoking		72 (24.0%)
Heart failure		31 (10.3%)
Hypertension		40 (13.3%)
Diabetes		29 (9.7%)
COPD		20 (6.7%)
Previous heart surgery		8 (2.7%)
Congenital heart disease		7 (2.3%)
CKD		5 (1.7%)
Hyperthyroid		3 (1.0%)

Table 2 shows Clinical data and symptoms & past history of SVT among the studied group

Table 2: Clinical data and symptoms & past history of SVT among the studied group

Clinical data		Patients group (n=300)
HR		168.73±16.92
SBP		111.13±17.99
DBP		69.22±12.79
Symptoms & past history of SVT		
Main symptom	Palpitation	245 (81.7%)
	Dizziness	32 (10.7%)
	Syncope	17 (5.7%)
	Weakness	6 (2.0%)
Past history of SVT	≥1	122 (40.7%)
	<1	89 (29.7%)
	1st episode	89 (29.7%)

Table 3 shows Laboratory investigations, and SVT pattern among the studied group.

Table 3: Laboratory investigations, and SVT pattern among the studied group

Laboratory investigations	Patients group (n=300)
HB	12.64±1.04
TSH	2.07±0.93
SVT pattern	
AVNRT	174 (58.0%)
AVRT	88 (29.3%)
AT	38 (12.7%)

Table 4 shows ECHO data and management among the studied group.

Table 4: ECHO data and management among the studied group

ECHO data	Patients group (n = 300)
Normal	193 (64.3%)
CAD	49 (16.3%)
CHD	8 (2.7%)
LVH	39 (13.0%)
VHD	11 (3.7%)
Management	
Pharmacological medication	270 (90.0%)
Ablation plus medication	30 (10.0%)

Discussion

Supraventricular tachycardia (SVT) is a clinical phenomenon defined by a fast heartbeat that begins and ends abruptly. These arrhythmias are common in otherwise healthy persons with no structural cardiac problems. Palpitations and dyspnea are common symptoms, as is tachycardia-induced cardiomyopathy. The three most prevalent causes of SVT are AVNRT (50-60%), AVRT in individuals with Wolff-Parkinson-White syndrome [6, 7].

Our study included 72 (24%) smoker patients, 31 (10.3%) patients with heart failure, 40 (13.3%) patients with hypertension, 29 (9.7%) patients with diabetes, 20 (6.7%) patients with COPD, 8 (2.7%) patients with previous heart surgery, 7 (2.3%) patients with CHD, 5 (1.7%) patients with CKD and 3 (1%) hyperthyroid patients. Regarding to Kamel, Elkind (9), a study which assessed the Paroxysmal SVT and the risk of ischemic stroke, showed that 51.5% patients were hypertensive, 22.6% patients with diabetes, 13.5% patients with COPD, 15.5% patients with congestive heart failure and 11.3% patients with CKD.

The mean heart rate in our study populations was 168.73±16.92 BPM. The mean SBP was 111.13±17.99 mmHg while the mean DBP was 69.22±12.79 mmHg. Comparable to our results, Shaker, Jahanian (10) a study conducted on 92 patients to assess the efficacy of oral verapamil in paroxysmal SVT recurrence control showed that the mean HR was 162.7 (±11.0) BPM, the mean SBP was 113.7 (±13.9) mmHg and the mean DBP was 80.4 (± 9.9) mmHg

Regarding to our study, 81.7 percent of cases suffered palpitation, 10.7% of cases suffered dizziness, 5.7% of patients had syncope while 2% of patients had weakness.

In Daengbubpha, Wittayachamnankul (11) a study conducted on 30 patients comparing the approaches of adenosine administration in paroxysmal SVT showed that 90% patients had palpitation, 3% of patients had syncope while 20% of patients had chest pain. In Harris and Sahay (12), 91% of cases suffered palpitation, 76% of cases suffered dizziness, 44% of cases suffered dyspnea, 38% of cases suffered syncope, 33% of cases suffered fatigue and 27% of cases suffered chest pain.

Regarding to our study results, the mean HB level was 12.64±1.04 while the mean TSH level was 2.07±0.93. Ocak, Erdem (13) a study conducted on 122 patients to assess the importance of the mean platelet volume in the diagnosing SVT showed that the mean HB level was 13.20 ± 1.75 g\dl. Comparable to our study, Gwag, Jun (14) showed that the mean TSH level was 2.74.

Our study showed that 58% AVNRT, 29.3%AVRT and 12.7% AT. Tan *et al.*, 2022 stated that 57% AVNRT, 37% AVRT and 6% AT. In our study, 90% of patients were managed medically while 10% of patients were managed by ablation plus medications.

Limitations

Small sample size. Short duration of follow up.

Conclusions

Supraventricular tachycardia is one of the frequent etiologies for hospital attendance and acute admission in the region Delta of Egypt. Close inspection of the ECG in sinus rhythm regarding the initiation, termination and duration of tachycardia, the diagnosis is usually feasible, thus help guiding the management and urgency of treatments entailed, in addition to allowing initial patient counseling for long-term treatment recommendations.

Conflict of Interest

Not available

Financial Support

Not available

References

1. Sohinki D, Obel OA. Current trends in supraventricular tachycardia management. Ochsner Journal. 2014;14:586-95.
2. Antzelevitch C, Burashnikov A. Overview of Basic Mechanisms of Cardiac Arrhythmia. Cardiac electrophysiology clinics. 2011;3:23-45.
3. Walters TE, Kistler PM, Kalman JM. Radiofrequency Ablation for Atrial Tachycardia and Atrial Flutter. Heart, Lung and Circulation. 2012;21:386-94.
4. ACC. Guideline for the Management of Supraventricular Tachycardia. American College of Cardiology. 2015:55-60.
5. Whinnett ZI, Sohaib SM, Davies DW. Diagnosis and management of supraventricular tachycardia. BMJ. 2012;345:776-779.
6. Bibas L, Levi M, Essebag V. Diagnosis and management of supraventricular tachycardias. CMAJ. 2016;188:466-73.
7. Page RL, Joglar JA, Caldwell MA, Calkins H, Conti JB, Deal BJ, *et al*. 2015 ACC/AHA/HRS Guideline for the Management of Adult Patients With Supraventricular Tachycardia: A Report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines and the Heart Rhythm Society. J Am Coll Cardiol. 2016;67:27-115.
8. Kotadia ID, Williams SE, O'Neill M. Supraventricular tachycardia: An overview of diagnosis and management. Clin Med (Lond). 2020;20:43-7.
9. Kamel H, Elkind MSV, Bhave PD, Navi BB, Okin PM, Iadecola C, *et al*. Paroxysmal supraventricular tachycardia and the risk of ischemic stroke. Stroke. 2013;44:1550-4.
10. Shaker H, Jahanian F, Fathi M, Zare M. Oral verapamil in paroxysmal supraventricular tachycardia recurrence control: a randomized clinical trial. Ther Adv Cardiovasc Dis. 2015;9:4-9.
11. Daengbubpha P, Wittayachamnankul B, Sutham K, Chenthanakij B, Tangsuwanaruk T. Comparing methods of adenosine administration in paroxysmal

supraventricular tachycardia: A pilot randomized controlled trial. BMC cardiovascular disorders. 2022;22:15.
12. Harris R, Sahay RN. Clinical profile of patients diagnosed with supraventricular tachycardia: A descriptive study at a tertiary care hospital. 2022. 2022;9:5.
13. Ocak T, Erdem A, Duran A, Tekelioglu U, Öztürk S, Ayhan S, *et al*. The importance of the mean platelet volume in the diagnosis of supraventricular tachycardia. African Health Sciences. 2013;13:590-4.
14. Gwag HB, Jun JE, Park Y, Lee SS, Park S-J, Kim JS, *et al*. Thyroid dysfunction in patients with suspected or documented supraventricular tachyarrhythmia. International Journal of Arrhythmia. 2019;20:1-7.

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