

ANSAR AUTONOMIC FUNCTION TEST (AFT) AND THE STANDARD TILT TABLE TEST (TTT):

A retrospective study in patients with possible orthostatic symptoms

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INTRODUCTION:

The prevalence of orthostatic hypotension (OH) is high in the elderly population [1], but the evaluation remains unsatisfactory. In this study we compare the results of a new autonomic function test (AFT) by ANSAR with the standard tilt table test (TTT).

METHODS:

- A records review was performed to find patients who had undergone to both TTT and AFT
- Clinical diagnosis and results of TTT and AFT were collated
- The primary neurologist reviewed the clinical records and judged each patient as having symptoms of
 - orthostasis (OH)
 - other autonomic sx (AS)
 - nonspecific symptoms (NSS) (thought to be unrelated to autonomic dysfunction.)

TTT judged + or – for OH or arrhythmia

AFT judged + or – for autonomic failure (AF), OH, a paradoxical parasympathetic response (PPS), or postural orthostatic tachycardia syndrome (POTS)

Sensitivity and specificity of the TTT and AFT were calculated.

True Positive: AS or OH and abnormal test.

False Negative: AS or OH and normal test.

True Negative: NSS and normal test.

False positive: NSS and abnormal test.

PATIENTS

Patients and symptoms (SX):

18 patients

9 males and 9 females

Ages: 24 and 83 years (mean: 52 years).

15 (83%) patients clinically judged to have autonomic dysfunction

8 with orthostasis

7 with non-OH AS

3 (17%) patients judged to have NSS.

RESULTS

TTT RESULTS

9 Negative

9 Positive for OH

2 sinus bradycardia

2 vaso-depres. syncope

AFT RESULTS

2 Negative

8 OH

7 PPS

6 AF

2 POTS

AUTONOMIC SX vs TILT TABLE

Chi-Square = 0.4, p = 0.527

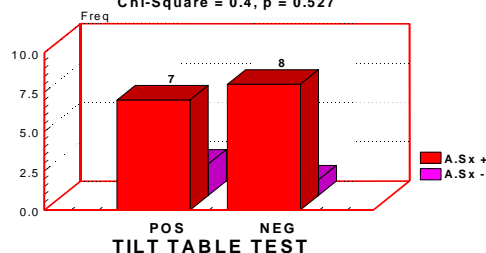


Fig. 1: TTT had a sensitivity of 46% and a specificity of 33%.

AUTONOMIC SX vs AFT

Chi-Square = 6.48, p = 0.0109

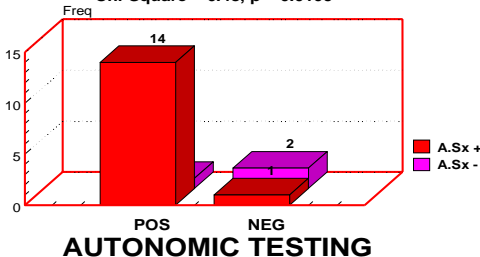


Fig. 2: The sensitivity of AFT was 93% and the specificity was 67%

AS (not OH) vs PPS

Chi Square = 7.9, p = 0.00494

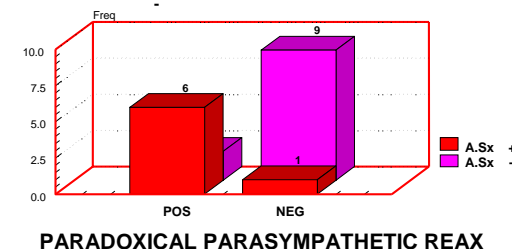


Fig. 3 PPS occurred more often in patients with AS than inpatients with isolated OH as a symptom

CONCLUSIONS

1. AFT had a higher sensitivity and specificity than TTT for confirmation of
 - autonomic symptoms in general
 - OH and non-OH AS
2. PPS was more often found in patients with AS than OH.
3. Additional specific diagnosis such as diffuse autonomic dysfunction and PPS can be made with the ANSAR AFT
4. AFT was also more sensitive for postural orthostatic tachycardia syndrome (POTS) treatable condition. In contrast to our results, previous study showed that TTT has a high sensitivity for identification of POTS [2], indicating that different laboratory techniques may affect the sensitivity.

REFERENCES:

1. Poon, I.O. and U. Braun, *High prevalence of orthostatic hypotension and its correlation with potentially causative medications among elderly veterans.* J Clin Pharm Ther, 2005. **30**(2): p. 173-178.
2. Grubb, B.P., et al., *The postural orthostatic tachycardia: a neurocardiogenic variant identified during head-up tilt-table testing.* Pacing Clin Electrophysiol, 1997. **20**(pt 1): p. 2205-2212.