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SHORT DURATION HEAD-UP TILT TEST POTENTIATED WITH ORAL NITROGLYCERIN IN SUSPECTED VASOVAGAL SYNCOPE: THE FAST ITALIAN PROTOCOL

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Background: The traditional nitroglycerin (NTG) head-up tilt test (HUTT) is time-consuming and the test duration is a barrier to widespread utilization in clinical practice. It was hypothesized that a short-duration protocol is not inferior to the traditional protocol as regards positivity rate and has a similar distribution of hemodynamic responses.

Method: Patients undergoing HUTT were randomized 1:1 to 10 min passive plus 10 min 0.3 mg NTG if the passive phase was negative (Fast) or to 20 min passive plus 15 min 0.3 mg NTG if the passive phase was negative (Traditional). A sample size of 277 patients for each group would have achieved 80% power to detect an expected difference of 0% with a non-inferiority margin of -10% using a one-sided t-test and assuming a significant level alpha of 0.025.

Result: A total of 554 consecutive patients (mean age 46.6 ± 19.3 years, 47.6% males) undergoing HUTT for suspected vasovagal syncope were randomly assigned to the Fast (n=277) or Traditional (n=277) protocol. A positive response, defined as the induction of syncope in presence of hypotension/bradycardia, was observed in 167 (60.3%) patients with Fast and in 162 (58.5%) patients with Traditional protocol. There was a trend for fewer vasodepressor responses (14.8% Fast versus 20.6% Traditional) which was significant during the passive phase ($p=0.01$). The optimal 10 min duration of the passive phase is consistent with the pattern of systolic BP changes observed during this phase. We showed a significantly increased HUTT positivity during the 10 min NTG phase in the Fast group compared to the first 10 min of NTG phase in the Traditional group (151 versus 101 patients, $p=0.0001$)

Conclusion: The diagnostic value of the Fast HUTT protocol is similar to that of the Traditional protocol and therefore the Fast protocol can be used instead of the Traditional protocol

