

of which 3 presented the best evidence to answer the clinical question. The author, date and country of publication, patient group studied, study type, relevant outcomes, results and study weaknesses of these best papers are tabulated. The clinical bottom line is that a modified Valsalva manoeuvre used with the Trendelenburg position appears to increase the success rates of reverting patients in SVT back to sinus rhythm compared with the sitting/standing position.

THREE-PART QUESTION

In (adult patients with supraventricular tachycardia) does (putting them in trendelenburg position) help (in cardioverting to sinus rhythm)?

CLINICAL SCENARIO

A 48-year-old male presents to the ED with a history of 45 min of palpitations. He is otherwise well and his only medical history is of paroxysmal supraventricular tachycardia (SVT). His ECG confirms SVT on this occasion. You are going to attempt the Valsalva manoeuvre and wonder whether the patient should stay sitting or whether the trendelenburg position would be better.

SEARCH STRATEGY

Database: Ovid MEDLINE(R) (1946 to week 2 November 2016)

([exp Tachycardia, Supraventricular OR tachyarrhythmia.mp. OR svt.mp. OR . OR tachyarrhythmia\$.mp. OR exp Tachycardia OR narrow complex tachycardia. mp. OR supraventricular arrhythmia. mp.]) AND ([exp Head-Down Tilt OR exp Supine Position OR modified valsalva. mp. OR trendelenburg.mp. OR trendelenburg tilt.mp.]])

SEARCH OUTCOME

Fifty-four search results. Three were relevant and of high enough quality to include (see table 2).

COMMENTS

There were numerous individual case studies and observational studies which appeared to support the use of the trendelenburg manoeuvre. It is also worth mentioning a paper by Wong *et al*; 'Vagal response varies with Valsalva manoeuvre technique: a repeated-measures clinical trial in healthy subjects'. The study was conducted on healthy subjects in sinus rhythm rather than SVT and ECG R-R

Table 2 Relevant papers

Author, year, country of publication	Patient group	Study type (level of evidence)	Outcomes	Key results	Study weaknesses
Appelboam <i>et al</i> , 2015, ¹ England	428 patients presenting to the ED with SVT, randomised into two groups (214 patients each): a modified Valsalva (supine and legs raised) and a sitting valsalva group	Postural modification to the standard Valsalva manoeuvre for emergency treatment of SVTs (REVERT): a randomised controlled trial	Reversion to sinus rhythm at 1 min post-Valsalva manoeuvre with up to two attempts	93/214 (47%) patients in the modified Valsalva manoeuvre group achieved the outcome vs 37/214 (17%) in the stay sitting Valsalva manoeuvre	
Mehta <i>et al</i> , 1988, ² UK	35 patients, with a history of paroxysmal SVT had tachycardias induced for the study	Relative efficacy of various physical manoeuvres in the termination of junctional tachycardia	Reversion to sinus rhythm in at least two out of three times tested	Sinus rhythm was restored in 19/35 (54%) using the Valsalva in the supine position vs 7/35 (20%) using the Valsalva in the standing position	Small number of participants. Unclear if comparing like-for-like as no detail given on standing position (ie, forced expiration for 15 or 30 s)
Waxman <i>et al</i> , ³ 1982, Canada	20 patients, with a history of paroxysmal SVT, had attempts to induce tachycardias at 0° (supine), -20° and 60°	'Reflex mechanisms responsible for early spontaneous termination of paroxysmal SVT.'	Spontaneous termination of the SVT	9/20 (45%) achieved termination at 0° vs 1/18 (6%) at 60° vs 1/13 (8%) at -20°	Small number participants. Unclear methodology and failure to successfully induce SVT consistently

SVT, supraventricular tachycardia.

BET 2: TRENDELENBURG POSITION HELPS TO CARIOVERT PATIENTS IN SVT BACK TO SINUS RHYTHM

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ABSTRACT

A short cut review was carried out to establish whether the use of the Trendelenburg position improves the rate of cardioversion in supraventricular tachycardias (SVTs). 54 papers were found

intervals used as a proxy for measuring vagal tone. They found that supine positions gave the longest R-R intervals and slowest mean pulse rates. However, extrapolating this to patients in SVT may not be accurate due to additional electrophysiological and haemodynamic variations; therefore, it was not included in table 2. Other than the REVERT trial, there was a lack of high-level studies to use for this BET demonstrating the need for further trials to be conducted in the future.

Clinical bottom line

Using the modified Valsalva manoeuvre appears to increase the success rates of reverting patients in SVT back to sinus rhythm compared with the sitting/standing position.

REFERENCES

- 1 Appelboom A, Reuben A, Mann C, *et al*; REVERT Trial Collaborators. Postural modification to the standard Valsalva manoeuvre for emergency treatment of supraventricular tachycardias (REVERT): a randomised controlled trial. *Lancet* 2015;386:1747–53.
- 2 Mehta D, Wafa S, Ward DE, *et al*. Relative efficacy of various physical manoeuvres in the termination of junctional tachycardia. *Lancet* 1988;28:1181–5.
- 3 Waxman MB, Sharma AD, Cameron DA, *et al*. Reflex mechanisms responsible for early spontaneous termination of paroxysmal supraventricular tachycardia. *Am J Cardiol* 1982;49:259–72.

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