OPEN ACCESS Freely available online

Journal of Clinical & Experimental Cardiology

Short Communication

Significance of Dobutamine-Atropine Stress Echocardiography

Mohammad-Ali Farrag*

Department of Cardiovascular Medicine, Minia University, Minia, Egypt

ABOUT THE STUDY

A well-recognized standard diagnostic stress technique for assessing underlying coronary artery disease is pharmacological stress testing employing the combination of dobutamine and atropine. This is applied in a number of cardiac imaging techniques, such as cardiac magnetic resonance imaging, nuclear perfusion imaging, and stress echocardiography. Following dobutamine-atropine stress testing, neuropsychiatric symptoms such as confusion and disorientation have been occasionally recorded; however they are uncommon [1]. A syndrome known as Transient Global Amnesia (TGA) is defined by a rapid loss of memory for recent and/or distant events as well as a temporary decrease in one's capacity to learn new information.

TGA is a widely known and documented phenomenon in neurological literature, with incidence rates of 5.2 instances per 100,000 people and up to 23.5 cases per 100,000 people in those over the age of 50 [2]. But because of its sudden onset and presentation, it can make patients and medical professionals extremely anxious.

The main characteristic of TGA, a paroxysmal transitory amnestic condition, is a loss of memory for recent events and a diminished capacity to retain new information. The patients may appear worried or agitated, with or without loss of orientation to time or location, even though the majority of the neurological test is rather ordinary [3].

Another noteworthy aspect is the patient's tendency to inquire about the incident again. Patients experience significant anterograde amnesia throughout the event because they are unable to make new memories. Additionally, retrograde amnesia with a varied length that might last for hours to years can also happen.

Usually, these symptoms disappear within less than a day. Although the related forgetfulness lessens as the condition develops, it is usual for individuals to have lasting amnesia about the experience since no new memories are produced during the syndrome [4]. Though several theories have been put out, the exact cause of TGA is still unknown. The following are only a few of the suggested theories: cerebral arterial ischemia, venous obstruction, migraine, epilepsy, and psychological stresses.

In particular in patients with underlying defective internal jugular valves, the function of Valsalva manoeuvres, which produces transient retrograde transmission of high venous pressure to the cerebral venous system, is intriguing [3,5]. When performing dobutamine cardiac stress testing, Valsalva manoeuvres are frequently used to bring the heart rate down after the peak heart rate has reached. This hypothesis therefore offers a possible justification for the presence of TGA. In a large study with 750 patients who underwent dobutamine stress echocardiography, it was determined whether neuropsychiatric symptoms occurred within 24 hours of the test. It was discovered that 7.1% of the patients had some sort of neuropsychiatric symptom, while amnesia was only reported in 0.4% of patients [1].

The incidence rate of neuropsychiatric symptoms climbed to 19.54% in the whole cohort when the atropine dose was N 1.0 mg, and it also had the greatest odds ratio of being related with such symptoms. In the same research described above, individuals who received atropine dosage 1.0 mg for stress testing saw a comparable incidence of neuropsychiatric symptoms as those who did not. Additionally, atropine poisoning results in anti-cholinergic syndrome, which has a range of symptoms including dysarthria and ataxia as well as central nervous system depression (somnolence or coma) and excitation (agitation, psychosis, and seizures).

It is crucial to distinguish between these two clinical diseases since this range of clinical characteristics is different from those connected with TGA. TGA, a side effect of the dobutamine stress test that is uncommon and has a self-limited course and a fair prognosis overall, must be distinguished from other possible cerebral ischemia events due to its dramatic presentation. A greater understanding of this illness can aid in its early detection, stop needless invasive and noninvasive testing, and lessen the anxiety felt by patients and medical professionals.

REFERENCES

1. Wuthiwaropas P, Wiste JA, McCully RB, Kane GC, Scott CG, Pellikka PA. Neuropsy-chiatric symptoms during 24 hours after dobutamine-atropine stress testing: a prospective study in 1,006 patients. J Am Soc Echocardiogr. 2011;24:367-373.

Correspondence to: Mohammad-Ali Farrag, Department of Cardiovascular Medicine, Minia University, Minia, Egypt, E-mail: farragali@gmail.com

Received: 04-Jul-2022, Manuscript No. JCEC-22-18799; **Editor assigned:** 08-Jul-2022, PreQC No. JCEC-22-18799 (PQ); **Reviewed:** 22-Jul-2022, QC No. JCEC-22-18799; **Revised:** 29-Jul-2022, Manuscript No. JCEC-22-18799 (R); **Published:** 05-Aug-2022, DOI:10.35248/2155-9880.22.13.737.

Citation: Farrag MA (2022) Significance of Dobutamine-Atropine Stress Echocardiography. J Clin Exp Cardiolog.13:737

2. Saura D, Penafiel P, Morales A, Albert L, Martínez F, de la Morena G, et al. Transient global amnesia after dobutamine-atropine stress echocardiography. Eur J Echocardiogr. 2008;9:567-568.
3. Bartsch T, Deuschl G. Transient global amnesia: functional anatomy and clinical implications. Lancet Neurol. 2010;9:205-214.
4. Owen D, Paranandi B, Sivakumar R, Seevaratnam M. Classical diseases revisited: transient global amnesia. Postgrad Med J. 2007;83:236-239.
5. Lewis SL. Aetiology of transient global amnesia. Lancet. 1998;352:397-399.