Comparing Outcome of Using Modified Valsalva Maneuver and Standardized Valsalva Maneuver in Two Different Patients Presented with Supra-Ventricular Tachycardia: Which is More Effective?

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Introduction: The Valsalva maneuver is a safe and internationally recommended first-line emergency treatment for supraventricular tachycardia (SVT)\[^1\]-\[^3\]. However, using Adenosine commonly cause unpleasant feeling to the patient, and cardioversion is rarely successful (5–20%)\[^4\]-\[^5\]. This case tends to compare effectiveness of standardized and modified Valvasalva maneuver which are executed in two different patients with SVT.

Methods: CASE ILLUSTRATION CASE 1: 45 y.o Female presented with palpitation worsening since 10 hours before admission. Associated symptom was dyspnea. On physical examination: BP(100/70mmHg), Pulse(190BPM, regular), RR(24x/minute), other examinations were unremarkable. Electrocardiography showed SVT (HR 210BPM), and standardized valsalva maneuver was executed. After 1 minute, HR reduced to 170, and SVT did not convert to sinus rhythm. Intravenous Adenosine was given to the patient CASE 2: 50 y.o Female presented with palpitation worsening since 6 hours before admission. Associated symptom was dizziness, and dyspnea. On physical examination: BP(110/70mmHg), Pulse(180BPM, regular), RR(22x/minute), other examinations were unremarkable. Electrocardiography showed SVT (HR 175BPM), and modified valsalva maneuver was executed. After 1 minute, HR reduced to 100, and SVT was converted to sinus rhythm. Intravenous Adenosine wasn't given to the patient.

Result: Modified valsalva maneuver which performed for patient in case 2 has more better outcome than for patient in case 1, since this maneuver produce sinus rhythm. REVERT Trial comparing these 2 maneuver shows; out of 428 patients with SVT, 43% (93/214 Patients) using modified valsalva maneuver, SVT return to Normal Sinus Rhythm (NSR) at 1 minute, and in 17% (37/244) using standard valsalva maneuver produce NSR at 1 minute. Using of adenosine is lesser after performing modified valsalva maneuver (108/214=50%) than standardized valsalva maneuver (148/214=69%). There is no any statistically significant adverse effect on both maneuvers (4% versus 6%)\[^6\]. This REVERT Trial concludes that modified valsalva maneuver is more effective.

Conclusion: Modified valsalva maneuver, is more efficient and might increase probability of returning SVT to NSR. In patients with cardiovascularly stable SVT, a modified valsalva maneuver should be the first maneuver attempted to convert SVT, since it is simple, zero cost, well tolerated, and with zero serious adverse events.