

Malignant arrhythmic storm, stellate ganglion and diabetes mellitus

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Introduction: Malignant arrhythmic storm (MAS) increases mortality more than three-fold according to current data. In the acute setting, besides resolving reversible causes, antiarrhythmics are the mainstay of treatment. The role of suppressing the local sympathetic nervous system activity, using stellate ganglion block (SGB) for example, is still being investigated.

Purpose:

To show short-term efficacy of SGB in suppressing the ventricular arrhythmia recurrence in MAS. To identify subgroups of patients with better clinical response after SGB.

Methods:

All consecutive patients with MAS, with standard treatment failure and ventricular arrhythmia recurrence, treated with ultrasound guided SGB, instilling 7ml of 0,5% Bupivacain.

58 MAS treated with SGB durin 2017 – 2020. There were 49 men (84,5%), average age 68,7 +/- 11,4, with average left ventricular EF 28,9 +/- 8,43%. There were 17 diabetics (29,3%).

Results:

When we compare the numbers of defibrillations for sustained ventricular tachycardia 48 hours before and 48 hours after SGB, being the primary therapeutic endpoint in MAS, we see a 96,7% reduction ($p < 0,001$). When we evaluate ventricular arrhythmias treated with both antitachycardia pacing and shocks, then we see 90% reduction ($p < 0,001$). The effect of SGB in ventricular arrhythmia suppression was statistically significant during the entire follow-up of 8 days.

When we analyzed the cohort, looking for groups showing better response after SGB in terms of ventricular arrhythmia reduction, the only group showing statistical significance in this regard are patients with diabetes mellitus.

Conclusions:

In our cohort, stellate ganglion block is exceptionally effective in the treatment algorithm of malignant arrhythmic storm. SGB shows significantly higher efficacy in the subgroup of patients with diabetes mellitus.

Abstract Figure. VA before and after BSG

Number of ventricular arrhythmias treated by the ICD shock

