Beta-blockers and Dobutamine in Heart Failure: a Safe Combination?

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The management of beta-blockers (BB) in acute heart failure (AHF) with low cardiac output requiring inotropic agents for compensation is controversial¹, especially when the agent to be used is dobutamine². The guideline on AHF takes no definitive stand in this scenario, allowing the doctors to judge the maintenance, reduction or suspension of these drugs³.

A study by Lima et al³ examined the hospital evolution of 44 patients with AHF divided into groups according to the presence of BB on admission and maintenance during use of dobutamine. They observed a similar evolution between the group with BB suspended versus the group where it was maintained concurrently with dobutamine.

This study has important methodological limitations: non-probabilistic sampling, formation of small heterogeneous comparison groups, which compromises its internal validity, and therefore does not allow for statistical inference. From the clinical point of view, relevant information such as the reasons for maintaining or suspending BB were not presented; furthermore, it is a cohort of survivors, and therefore does not take into account the principal outcome of the AHF with low output, the fatality rate.

Is it recommended to maintain BB during cardiac decompensation in patients with signs of low output while using dobutamine? There is still no answer. However, the authors deserve credit for having underscored an important clinical issue.

Reply

The finding that beta-blockers can be used concomitantly with dobutamine is of great interest and has been studied by several authors in recent years¹⁵. This paper objectively presents a prospective study of 44 patients hospitalized for heart failure decompensation who required the use of inotropic agents. So far, there have been no reports of a randomized study comparing the retention or suspension of beta-blocker when dobutamine is used in decompensation; however, there is evidence that maintenance of beta-blockers reduce mortality of these patients¹⁴.

Non-probability sampling can be used if the simple random sampling did not include sufficient numbers of patients from the subgroup in which there is a particular interest⁶. The heterogeneous sample is inherent in a cohort of patients, because the formation of groups is not randomized. However, cohort studies are used to evaluate clinical problems.

Although it is not a randomized study, some aspects deserve attention: all groups had the same length of hospital stay, arguing that the maintenance of beta-blocker does not interfere with the time of use of dobutamine or the need for higher doses; the group that had the beta-blocker maintained was discharged with higher doses of medication (35.79 ± 17.25 mg/day), as recommended in studies in which beta-blockers reduced mortality and rehospitalization. Not discontinuing the beta-blocker optimizes treatment at discharge.
The Hospital Auxiliar de Cotoxó (HAC), where the study was undertaken, receives decompensated cardiopathy patients from the emergency unit of InCor - HCFMUSP. Upon admission, the attending physician decided whether or not to suspend the beta-blockers considering the use of dobutamine and thus sent them to clinical compensation with the conduct already established. The patients were screened, and those who met the inclusion criteria were organized into groups. Therefore, researchers did decide which patients would or would not have the beta-blocker suspended.

Mortality was not defined as an outcome in this article, mainly because of the number of patients studied. During follow-up, we found 1 death with no statistical difference between groups; therefore, it is not a population of survivors.

References


