Abstract:

BACKGROUND: Quick change (QC) and double pumping (DP) are common methods of substituting the infusion of inotropes given through intravenous pump.

AIMS: The aim of the study was to compare two methods in respect with the variation in mean arterial pressure (MAP). The hypothesis was that the DP method could be the most effective in achieving haemodynamic stability.

DESIGN: The study is a randomized research in an open randomized clinical trial.

METHODS: The study took place at the Paediatric Intensive Care Unit of Padua Hospital. It considered patients of 0-36 months, not premature, treated with inotropic infusion with monitoring of blood pressure. The research obtained the approval of the Hospital Research Ethics committee and parents signed informed consent. Comparison of the two groups made use of the Wilcoxon test for the continuous variables and the Fisher’s exact test for the comparison of frequencies, at significance value of 5%. The data were registered in an Excel spreadsheet and analysed with SAS.
RESULTS: The sample comprised 30 patients of age between 1 and 27 months, of whom 13 (43%) were male. They were all affected by cardiac, respiratory or infective pathology, all of them intubated and on artificial respiratory support, sedated and infused with dopamine. The characteristics of the patients of the two groups did not differ significantly. The percentage variation of the baseline value of MAP after 30 min from starting the treatment between the two methods was not statistically significant ($p = 0.85$). The 95% confidence interval for the difference in the percentage variation of MAP between the two groups was (-3.1, +3.7). From a clinical perspective, the methods are to be considered equivalent.

CONCLUSIONS: The study was conducted on a limited sample; no statistically significant differences were detected; QC is the quickest and more cost-effective method.