Original Paper

Comparison of central venous and peripheral venous pressures in the antecubital region in coronary arterial bypass graft surgery

Hosseinnejad H (MD)*[1], Razzaghi M (MD)[2]

[1]Assistant Professor, Department of Anesthesiology, Islamic Azad University, Shahrood Branch, Shahrood, Iran.
[2]Assistant Professor, Department of Anesthesiology, Kerman University of Medical Sciences, Kerman, Iran.

Abstract

Background and Objective: Previous studies suggest a correlation of central venous pressure (CVP) and peripheral venous pressure (PVP) in different surgeries. CVP is one of essential monitoring during coronary arterial bypass graft (CABG). Canulation of peripheral venous catheter and PVP measurement is easier, whit less complication. This study was done to compare the central venous and peripheral venous pressures in the antecubital region in coronary arterial bypass graft surgery.

Materials and Methods: This descriptive analytical study was done on 84 patients with American society of anesthesiology III with CABG surgery in Shafa hospital, Kerman, Iran during 2007. The technique of anesthesia was the same in all patients. CVP and PVP were measured every 20 minutes intervals before, on and after cardio-pulmonary pump. Data were analyzed using STAT-10, ANOVA and linear regression tests.

Results: A total of 750 simultaneous measurements of CVP and PVP were recorded in all patients. The mean of CVP before of pump was 6.8±0.9 and the mean of PVP was 8.8±1. The mean difference between CVP and PVP was ±2 mmHg and this difference was significant ($P<0.05$). The mean of CVP on pump was 3.9±1 and the mean on PVP was 7.6±1. The mean difference of these two changeable was ±3.7 mmHg. This difference was significant ($P<0.05$). The mean of CVP after of pump was 6.5±1 and the mean of PVP was 8.5±1. The mean difference this two changeable was ±2 mmHg and this difference was significant ($P<0.05$).

Conclusion: PVP and CVP are related with each other on cardio-pulmonary pump even in severe hemodynamic condition. PVP and CVP changes are synchronized and PVP is a helpful clinical alternative for estimation of CVP.

Keywords: Central venous catheter, Peripheral venous pressure, Coronary arterial bypass graft, Cardio-pulmonary pump

*** Corresponding Author: Hosseinnejad H (MD), E-mail: hosseinnejad@iau-shahrood.ac.ir**

Received 7 January 2012 **Revised** 21 April 2012 **Accepted** 23 April 2012

This paper should be cited as: Hosseinnejad H, Razzaghi M. [Comparison of central venous and peripheral venous pressures in the antecubital region in coronary arterial bypass graft surgery]. J Gorgan Uni Med Sci. 2013; 15(1):80-84. [Article in Persian]