HEMODYNAMIC PARAMETERS AFTER PERFTORAN-HSS ADMINISTRATION

Vânătu V.1), V. Ordodi2), S. Bolte1)

1Faculty of Veterinary Medicine Timisoara, Calea Aradului nr. 119, Timisoara, Romania, 2University of Medicine and Pharmacy “Victor Babeș” Timisoara, Romania vivian.vanatu@gmail.com

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SUMMARY

This study tested Perftoran blood substitute and Perftoran associated with NaCl 2.9% solution PSH for the use in hemorrhagic shock treatment in rats. For this study, 40 rats were divided into 4 groups: M (control), SH (hypertonic saline), P (Perftoran), PSH (Perftoran + hypertonic saline). Animals were anaesthetized, intubated and artificially ventilated with 100% oxygen. Carotid artery was catheterized for mean arterial pressure (MAP) measurement, blood withdraw, blood sampling and therapy administration. MAP and ECG lead II were recorded on a computer using Digidata 1200 acquisition system and AxoScope 10 acquisition software.

A 10 minutes stabilization period was allowed prior to baseline values recording. Baseline values were recorded for a period of 20 minutes. After this period animals were partial exsanguinated by withdrawal of blood until MAP fall below 45 mmHg. Animals were maintained with MAP bellow 45 mmHg for 30 minutes, allowing hemorrhagic shock to install. Resuscitation was made after this period and values were recorded during a 30 minutes period after resuscitation. Primary resuscitation consisted in intra-arterial infusion of 5.25 ± 0.23 mL/100g NaCl 0.9% solution in group M, 2.75 ± 0.24 mL/100g NaCl 3.5% (HSS 3.5%) solution in group SH, 3.33 ± 0.28 mL/100g Perftoran emulsion in group P and 3.50 ± 0.35 mL/100g Perftoran + NaCl 2.9% association (called PSH) in group PSH.

Heart rate increased after hemorrhagic shock in all groups and remained increased after therapy. No significant amelioration of heart rate is observed after therapy with 0.9% and 3.5% NaCl solution, Perftoran or PSH.

MAP decreased to 41 mmHg in hemorrhagic shock in all groups. After therapy Perftoran and PSH increased MAP with 36.29% and respectively 29.79% compared to shock values. The MAP increase recorded after NaCl 0.9% and 3.5% administration was 15.26% and 15.48%. Results obtained show that Perftoran and Perftoran – NaCl 2.9% solution association increases MAP values to almost normal values. Due to the fact that therapy administration was made via I.A. way, we assume that the MAP increase will be greater if therapy is administrated via I.V. way and 7.5% NaCl solution is used.

MAP increase after Perftoran administration was greater than after PSH administration probably due to an decrease of Perftoran dose. SSH 3.5% has little effect on MAP increase after hemorrhagic shock.