

Suprahepatic inferior caval vein occlusion induced portal and caval hypertension, aortic hypotension and esophageal bleeding. therapy with pentadecapeptide BPC 157

Tajana Đurašin^a, Zoya Jelovečki – Dokić^a, Fry Josh^a, Žižek Helena^a, Peraić Pavla^a, Radveski Filip^a, Borna Vrdoljak^a

^a *School of Medicine University of Zagreb, Department of Pharmacology*

Tajana Đurašin 0000-0002-6893-0875, Zoya Jelovečki – Dokić 0000-0001-6758-4627, Fry Josh 0000-0003-1280-7576, Žižek Helena 0000-0001-9863-4164, Peraić Pavla 0000-0002-1733-5443, Radveski Filip 0000-0001-7556-1652, Borna Vrdoljak 0000-0003-2306-8799

Key words: BPC 157, Hypotension, Hypertension, Esophageal bleeding

Pentadecapeptide BPC 157 is intraduced as therapy in a suprahepatic inferior caval vein (ICV) occlusion 15 min, 24h, 48h after complete ICV ligation. Suprahepatic ICV complications that were counteracted by BPC 157 included esophageal bleeding, severe portal and caval hypertension, and aortic hypotension. Likewise, BPC 157 counteracts the lesions in the whole GI-tract. Medication (BPC 157 (10 µg/kg, 10 ng/kg), or saline (5 ml/kg) (controls)) was applied as an abdominal bath immediately after ICV occlusion. ICV occlusion produced severe esophageal bleeding in all controls, along with microscopy findings. Contrarily, given in ischemic period, BPC 157 counteracts severe esophageal bleeding and maintained grossly intact esophageal mucosa . In rats with ICV occlusion, assessment of portal (PV), caval (ICV) and aortal (AA) pressure showed huge portal hypertension and more caval hypertension, along with mild aortic hypotension (15 min: 68±4 PV, 45±4 ICV, 73±3 AA; 24 h: 56±5 PV, 49±5 ICV, 35±3 AA; 48 h 30±3 PV, 48±5 ICV, 39±3 AA-ligation period). Contrarily, BPC 157 in rats with suprahepatic ICV occlusion markedly counteracted portal and caval hypertension, and arterial hypotension (10 µg/kg bath 15 min: 3±1 PV, 9±1 ICV, 117±5 AA; 24 h: 5±1 PV, 9±1 ICV, 67±5 AA; 48 h: 5±1 PV, 9±1 ICV, 70±6 AA), 10 ng/kg bath produced similar results. BPC 157 therapy successfully counteracts the adverse effects of the suprahepatic ICV occlusion.