Complications of portal triad obstruction and reperfusion in rats. pentadecapeptide BPC 157 counteracts venous and arterial thrombosis and arrhythmias

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We wanted to explore effect of pentadecapeptide BPC 157 therapy in temporary portal triad obstruction (PTO) (hepatic artery (HA), portal vein (PV), bile duct occlusion for 30 min in rats), and in reperfusion period in post-PTO-period on the counteraction of the Pringle maneuver complications (cloth formation in the PV, superior mesenteric vein (SMV), lienal vein (LV), inferior caval vein (ICV) HA, peaked P wave and tachycardia). Medication (BPC 157 (10 μg/kg, 10 ng/kg), or saline (5 ml/kg) (controls)) was applied as a bath at the clamped area after portal triad clamping in rats with PTO or at the area that used to be clamped at 1 min or at 24 h reperfusion time. A period of 30 min of PTO produced thrombosis in the ICV, PV, SMV, LV and HA. In BPC 157 treated rats, the weights of the formed clots were smaller. PTO rats exhibited peaked P wave values and tachycardia which were absent in BPC 157-treated rats. Rats in post-PTO-period, during reperfusion exhibited peaked P wave values and tachycardia. Applications of BPC 157 (given at 1 min or at 24 h reperfusion time) resulted in the absence of the peaked P waves. Tachycardia was also affected; sinus rhythm appeared in a normal range of heart frequency. Confronted with Pringle maneuver and its consequences, BPC 157 therapy distinctively mitigates the whole syndrome, involving the counteraction of the course of the thrombosis in both veins and arteries, and ECG acute right ventricular overload.