DEEP VENOUS THROMBOSIS AND ACUTE PANCREATITIS PROMOTED BY RAPAMYCINE IN KIDNEY TRANSPLANT RECIPIENT

45th EDTNA/ERCA International Conference
September 17–20, 2016
The Valencia Conference Centre
Valencia, Spain

Radmila Bracanovic,BSN, Marina Ratkovic, MD PhD, Zorica Rasovic, BN, Dragana Velimirovic, BN, Jelena Krstajic, BN, Snezana Bosnic, BN, Ivana Draskovic,BSN, Danilo Radunovic, MD, Vladimir Prelevic, MD

Nephrology and Hemodialysis Department , Clinical Center of Montenegro , Podgorica, Montenegro

BACKROUND

Recently, evidence indicate that rapamycin may contribute to an increased risk of thrombosis. Researchers found that endothelial membrane remodeling induced by rapamycin is crucial for the adhesion of platelets to endothelial cells and thereby for thrombosis. Many investigations showed that rapamycin induces autophagy of pancreatic cells (figure 1.).

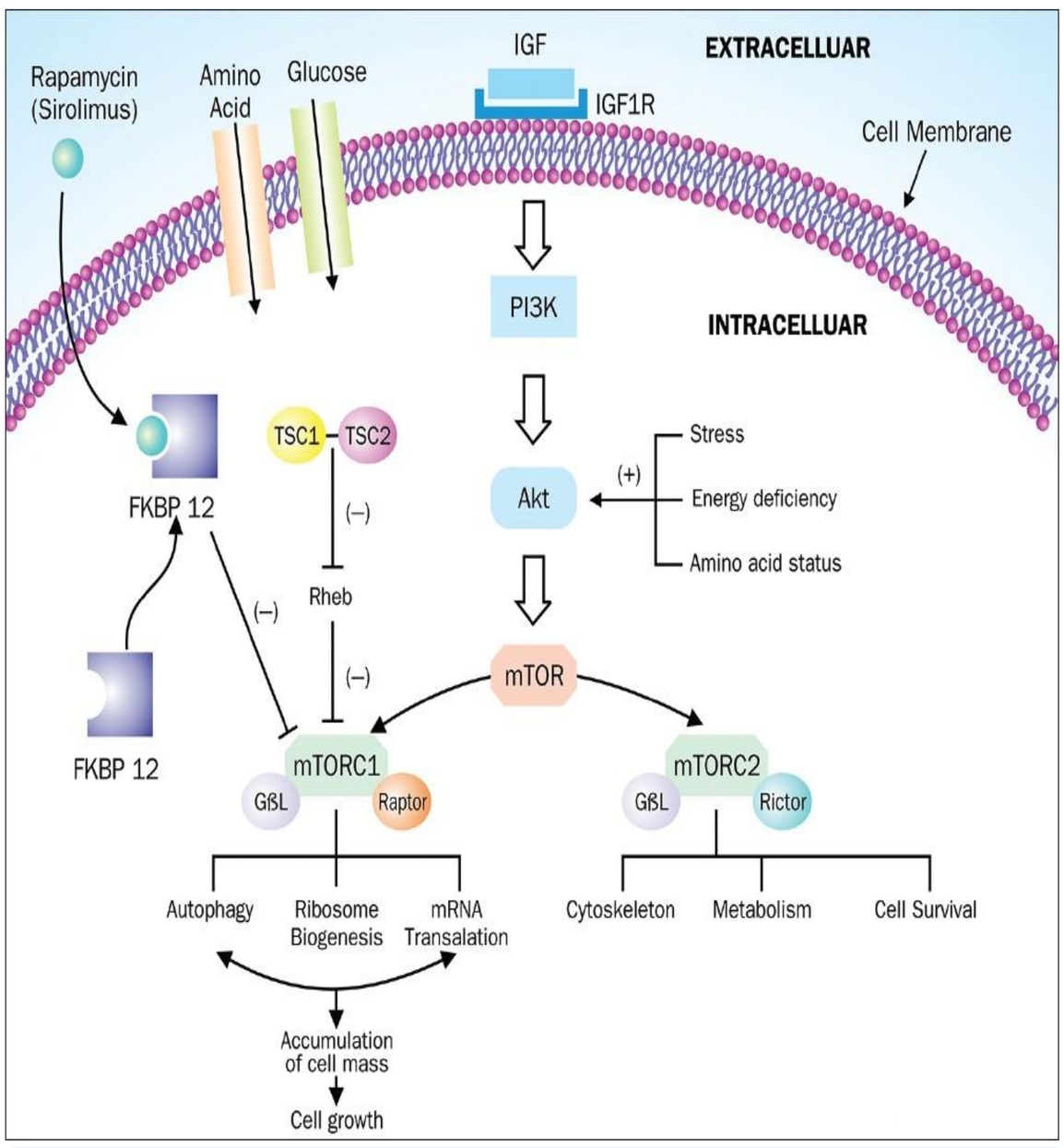

Figure 1: Mechanism of action of sirolimus

MATERIALIS AND METHODS

CASE REPORT STUDY

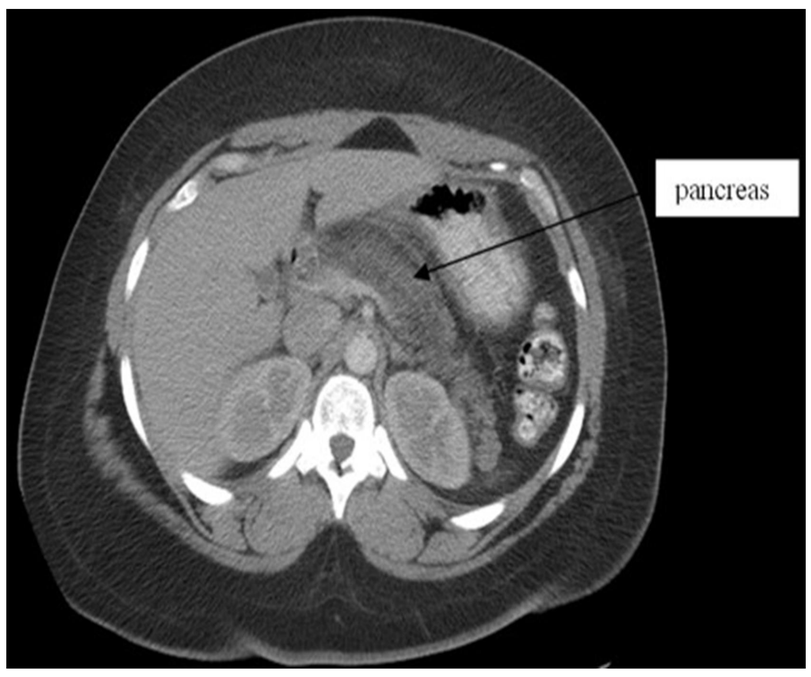

Figure 2: CT scan of abdomen with contrast

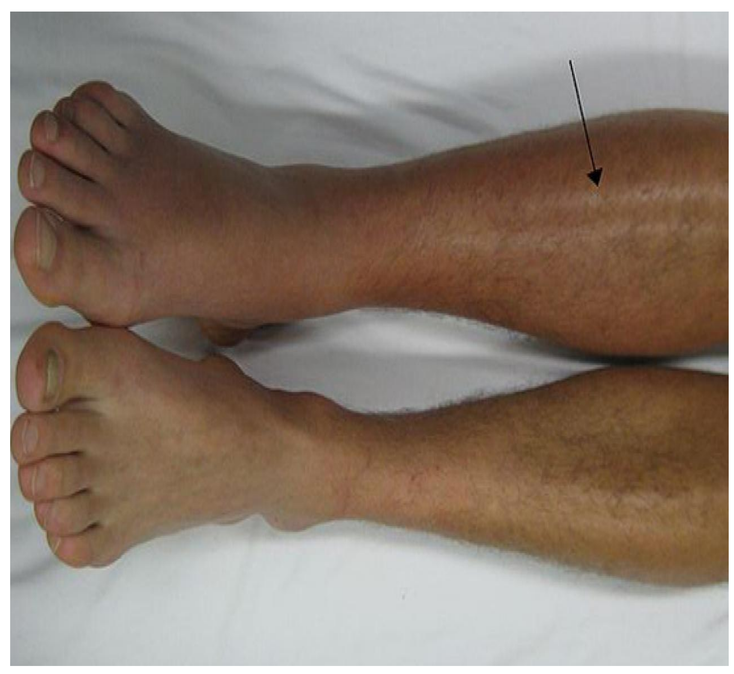

Figure 3: Deep venous thrombosis

RESULTS AND DISCUSSION

Male patient, 26 years old, was treated with preemptive kidney transplantation from living related donor. He was treated with thymoglobulin in induction therapy because of donor specific antibodies detected prior to transplantation. He received 100mg of thymoglobulin. Due to surgical complications, he had reperfusion graft injury and delayed graft function. Initial immunosuppressive protocol with thymoglobulin and tacrolimus was converted to rapamycin and dismissal of thymoglobulin. Patient was treated with LMWH (low-molecular-weight heparin) regular in preparation and after intervention. One month after rapamycin treatment he developed deep venous thrombosis of right leg (figure 3.). He was treated with intravenous heparin and symptomatic therapy with successful recanalization of venous vessels. Twenty days after rapamycin usage he developed abdominal pain typical for acute pancreatitis followed by increased serum concentrations of amylase and lipase and urine amylase concentrations (figure 2.). Patient was treated with polysymptomatic therapy with recovery of pancreas function and normalization of serum and urine concentrations of amylase and lipase. .Finally, rapamycin was removed from the immunosuppressive therapy. Patient is with stabile graft function in the next year of follow up period without thrombosis episodes or episodes of pancreatitis.

CONCLUSION

All patients treated with rapamycin after kidney transplantation should be carefully monitored for venous thrombosis and pancreatitis events.

REFERENCES:

[1] Adam D. Barlow, Michael L. Nicholson, and Terry P. Herbert. Evidence for Rapamycin Toxicity in Pancreatic b-Cells and a Review of the Underlying Molecular Mechanisms. DIABETES, VOL. 62, AUGUST 2013; 2674-2682.
[2] Zahr, Elsie et al. Rapamycin Impairs In Vivo Proliferation of Islet Beta-Cells. Transplantation 200;84 (12): 1576-1583.
[3] Christiane J. Bruns. Rapamycin-Induced Endothelial Cell Death and Tumor Vessel Thrombosis Potentiate Cytotoxic Therapy against Pancreatic Cancer. Clinical Cancer Research 2004; 10: 2019-2019.
[4] Tanemura M, Ohmura Y, Deguchi T, et al. Rapamycin causes upregulation of autophagy and impairs islets function both in vitro and in vivo. Am J Transplant 2012; 12: 102–114.
[5] Susann Stephan et al. Effect of Rapamycin Alone and in Combination with Antiangiogenesis Therapy in an Orthotopic Model of Human Pancreatic Cancer. Clinical Cancer Research 2004; 10: 6993-7000