**Severe hypoalbuminaemia following a Roux-en-Y gastric bypass in a patient with type 1 diabetes mellitus**

Eva-Christina Krzizek¹ ²,Johanna Maria Brix¹ ², Bernhard Ludvik¹ ²

¹ Department of Medicine I, Rudolfstiftung Hospital, Vienna, Austria

² Karl Landsteiner institute of obesity and metabolic disease

Introduction:

Albuminuria in the context of diabetic nephropathy is a known side effect of poorly controlled diabetes. Data of the SOS study showed a reduction of albuminuria after bariatric surgery. On the other hand, Roux-en-Y gastric bypass carries the risk of protein malabsorption due to changes in the gut anatomy and physiology. In this case report we describe the results of a patient with both, diabetes mellitus and bariatric surgery.

Material and methods:

A 49-year old woman (height 157 cm, weight 95kg, BMI 38.5 kg/m2) with Type 1 diabetes since 1983 underwent Roux-en-Y gastric bypass in 2005. She was admitted to our hospital due to generalized edemas. Routine check-up for bariatric patients was performed including blood tests after an overnight fasting and a urine sample. Amongst others HbA1c, creatinine, albumin and albumin-creatinine-ratio were evaluated. Yearly check-ups of these parameters were evaluated retrospectively since 1999.

Results:

As expected, there was a significant weight loss after bariatric surgery (2005: 122 kg, BMI 49.4 kg/m2; 2007: 80 kg, BMI 32.4 kg/m2). Diabetes control has always been poor (HbA1c 8.9% (1999), 8.7% (2005), 10.3% (2007), 10.8% (2017)). Diabetic nephropathy and retinopathy have been known since 1999. Albuminuria was present before bariatric surgery and got worse over the years (ACR 32.6 mg/g (1999), 158 mg/g (2005), 2246,4 mg/g (2014), 1336.1 mg/g (2017). Furthermore, hypalbuminemia has been present before surgery and deteriorated subsequently (albumin 29.0% (1999), 60.6% (2005), 32.2% (2012), 21.6 (2017)).

Conclusion:

In this patient, albuminuria unexpectedly worsened after Roux-en-Y gastric bypass despite weight loss, most likely due to insufficient metabolic control. Following surgery, decreased protein absorption contributed to the severe hypoalbuminemia resulting in generalized edemas. Thus, patients at high risk for hypoalbuminemia, especially those with diabetic nephropathy, need to be carefully evaluated preoperatively and be offered non-malabsorptive bariatric procedures such as sleeve gastrectomy, if indicated.