Effect of radiographic contrast media on renal perfusion: *first results*

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Purpose: The intra-arterial administration of radiographic contrast media (RCM) is thought to cause acute renal dysfunction. This study was performed on pigs to assess the renal effects of RCMs on kidney microcirculation and macroperfusion.

Material and Methods: The study was designed as a prospective, randomized trial to investigate the influence of RCM in pigs. Ultrasound (US) perfusion analysis were performed on the kidney surface before and after the first, fifth, and tenth bolus of RCM. The kidneys were explanted and the local distribution of RCM was analysed by radiography.

Results: The perfusion analysis showed a significant difference between both RCM. While the mean systolic maximum velocity in the A. renalis increased after Iodixanol application it decreased after Iopromide application (p<0.042). After Iodixanol Renal Resistive Index (RRI) decreased while after Iopromide the RRI increased (p=0.033). There was an inhomogeneity and a decrease in contrast in the kidney rim with higher amounts of iodine in the renal pelvis of kidneys after RCM application.

Conclusion: The results of the study allow a consistent judgement of the influence of repeated injections of radiographic contrast media on the kidney perfusion using Ultrasound, and X-ray analysis.