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Tropical nephropathy

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Several prospective controlled studies were conducted by the research group in patients with tropical diseases such as visceral leishmaniasis, schistosomiasis and leprosy leptospirosis. Patients who were admitted to tertiary hospitals in Fortaleza, Ceará and outpatient clinics were monitored. To assess glomerular function, the glomerular filtration rate was estimated using the equation and CKD-EPI to plasma creatinine. It measured proteinuria and albuminuria, normalizing values by the urinary creatinine (mg/g-creatinine). The renal tubular function was assessed by a fractional sodium excretion (FENa +), potassium excretion fraction (FEK +). Urine was measured for MCP-1, NGAL and KIM-1, novel early biomarkers of renal injury, which were quantified by immunoassay technique of enzyme-linked (ELISA). Urinary biomarkers were normalized by urinary creatinine in the same sample and expressed in "mg/g Creatinina". The concentration of nitric oxide was carried out indirectly through the formation of its stable metabolite. It was also evaluated and endothelial injury through glococálice dosages Syndecam-1 and ICAM-1. The MCP-1 was shown useful as urinary biomarker for detecting subclinical renal dysfunction and as a predictor of long-term kidney disease in tropical diseases. In patients with mild renal damage secondary to leptospirosis, endothelial injury and especially their glycocalyx could be demonstrated by elevated serum levels of syndecan-1 and ICAM-1 and are related to the presence of acute kidney injury.

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Ultra-structural characterization of renal interstitial fibrosis in cats with chronic disease

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Kidney Interstitial fibrosis leads to a progressive loss of nephrons and has been clearly correlated with decreased renal function and consequent chronic disease. This study demonstrated the deposition and arrangement of collagen fibers in cat kidneys with chronic disease. We studied 10 cats with chronic kidney disease. After death, kidneys were sectioned and fixed in 4% paraformaldehyde and 2.5% glutaraldehyde solution. Then, samples were washed in 0.1M phosphate buffer and transferred to osmium 2% solution. After that, the process of dehydration was started and 2% uranyl acetate was added. At this time, samples were washed with propylene oxide solution and embedded in Araldite resin at 70°C for 3 days. The resin blocks were cut in semithin sections in ultra-microtome and further selection areas to ultrathin sections to be analyzed in transmission electron microscopy. This work was approved by the Ethics Committee for Animal use. The thin sections showed strong deposition of interstitial collagen, periglomerular and peri-vascular inflammatory cells and fibroblasts. In the transmission electron microscopy, the fragments had arranged collagen fibers around the glomeruli and tubules with streaks dense electron. We observed areas with many fibers arranged longitudinally forming beams. We concluded that the analysis of morphological changes in cat kidneys with chronic disease, through studies of the cells involved the occurrence of fibrosis and tubular damage are extremely important and necessary for greater understanding of the evolution and progression of this disease in cats.

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