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Early alterations in diabetic nephropathy

Diabetes is one of the main causes of renal failure all over the world. The mechanisms initiating diabetic nephropathy have been only partially studied. We analyzed the damage induced by diabetes on the intercellular renal junctions since information on this issue is relevant. Glucose is filtered in the kidney at the glomeruli and is reabsorbed at the proximal tubule. In the absorption of glucose participates SGLT1 and 2, located at the apical brush border and GLUT1 and 2, located at the basolateral membrane of the proximal tubular cells. We explored differentially alterations in the glomeruli, the proximal tubule and the distal tubule. We found extensive decrease and damage in claudin 5, protein located at the glomerular capillaries and in claudin 2, intercellular protein of the proximal tubule. In distal tubules we found increment in claudins 4 and 8, but not delocalization of these proteins. These lesions were observed in the presence of oxidative stress which has been also described in the diabetic patient. The glomerular and the proximal tubular damage were ameliorated by the prevention of oxidative stress.

Biography

Jose L Reyes has completed his MD degree from National University of Mexico (1964). He was a Pediatric Nephrologist in Hospital Infantil de Mexico Federico Gomez (1969), Research fellow in Children's Hospital of Los Angeles CA, USA. He obtained his PhD degree from Center for Research and Advanced Studies, National Polytechnic Institute, Mexico (1977). He is currently a full Professor at National Polytechnic Institute, Mexico and former Head of the Department of Physiology, Biophysics and Neurosciences. He has been an Invited Professor in the University of Lausanne, Switzerland, 1983-1984, Université de Paris VI, Albert Einstein College of Medicine, USA, New York Medical College, USA, Université de Paris, France, Université de Nice, France and Cambridge University, England. He also has 135 publications.

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