

## CME 2024 DOKI Project

This CME 2024 of the DOKI Project focused on the pathogenesis of renal disease in the context of diabetes and obesity. The course was held in Garachico, Tenerife, the days 22 and 23 of November. Eleven speakers, from Spain, Denmark, Norway, Australia, Holland and Argentina, with expertise in the field, discussed diverse aspects of renal damage induced by obesity, metabolic syndrome and diabetes. Also, 8 posters were shown in the Coffee breaks. The course was divided in two days:

### Day 1 – November 22

On the first day, the host Dr. Esteban Porrini started at 8.30 am with a brief introduction to the course and a welcome to this 2024 CME. Then, the presentation began with a view of **“The epidemiology of renal disease in diabetes and obesity”**. The first speaker was Dr. Bo Feldt from Copenhagen who spoke about the burden of chronic kidney disease (CKD) in the contest of diabetes, including a perspective of the last 30 years. In the same line, Enrique Morales, from Madrid discussed the role of the current pandemic of obesity in the incidence and prevalence of CKD. Then we discussed the morphological changes in the kidneys in subjects with diabetes and obesity in a section entitled **“The Renal Pathologist View”**. Maria Fernanda Toniolo from Argentina showed to the audience the features of obesity-related renal disease and Joris Roelofs from Leiden discussed the pathological features of diabetic nephropathy. In particular, both pathologists discussed the common pathways and aspects of renal damage in obesity and diabetes.

Around 10.00 am during the first Coffee break of the day, the attendants had the opportunity to have a small breakfast and visualize the 6 presented posters titled:

- 1- Exercise and prediabetes after renal transplantation: EXPRED-II. (ULL)**
- 2- Exercise intervention in patients with metabolic syndrome and renal disease: a prospective study (EXRED) (ULL)**
- 3- Tacrolimus and the pancreatic beta cell: an animal model of type 2 diabetes (ULL)**

**4- Factors associated with renal functional reserve in living kidney donors (ULL)****5- Pancreatic beta cell function and liver structure before and after transplantation. (Denmark)****6- The MULAGUA study: A Spanish cohort on Renal Health (ULL).****7- Sexually dimorphic effect of TGF $\beta$ 3 in determining mitochondrial function in the development of fibrosis in kidney (Madrid)**

In the second part of the day, we discussed two specific aspects of the pathogenesis of renal damage: glomerular hyperfiltration and vascular damage. Richard MacIsaac from Australia, gave a comprehensive overview of, from the pathogenic background to the clinical consequences of glomerular hyperfiltration. Then, Esteban Porrini, from the University of La Laguna showed the results of the European Nephrectomy Biobank, that indicated the high prevalence of intra-renal ischemia (arteriosclerosis and hyalinosis) in the kidney of subjects with obesity, metabolic syndrome and diabetes.

The last talk of the first day was a Lecture of Professor Trond Jenssen from Oslo, on the role of metabolic changes i.e. insulin resistance and dyslipidemia in renal function loss.

**Day 2 – November 23**

The second day the course started at 9.00 am and focused on diverse aspects of the pathogenesis of renal damage in obesity, such as insulin resistance, lipotoxicity and inflammation. Andrasz Stozar from Maribor gave a comprehensive view of insulin resistance including diverse topics: origin, measurement, and the role of insulin resistance in renal damage discussing aspects like hyperfiltration, sodium reabsorption, bioenergetics changes, etc. Mads Hornum from Denmark discussed the role of inflammation in renal disease, the most commonly investigated markers of inflammation both in renal tissue and urine. Jano Di Croce, from the ULL, showed the results of our group in renal lipotoxicity in small and large animal models. In particular, Dr Di Croce showed data on lipid consumption as energy and the link between inflammation and lipotoxicity.

Finally, Dr. Ana Rodríguez from the Hospital Universitario de Canarias (La Laguna), showed the available models of renal disease in the context of obesity, metabolic syndrome and diabetes. Dr Rodríguez showed data of her own laboratory in models of insulin resistance and early renal damage, with hyperfiltration and glomerular lesions of obesity-related glomerulopathy.

Finally, the members of the DOKI project closed the CME course by giving some conclusions, remarks and explaining some future activities of the research group for 2025.