

## RENAL DISEASE IN OBESITY-OVERWEIGHT-METABOLIC SYNDROME AND DIABETES

### PROJECT DESCRIPTION

The epidemic of obesity and type 2 diabetes (T2DM) may portend severe consequences in nephrology. Obesity and diabetes represent a continuum of metabolic alterations which can greatly increase the chance of renal disease. Common markers of renal damage in diabetes and obesity include i.e. insulin resistance, hypertension, prediabetic alterations in glucose metabolism, insulin resistance, hyperuricaemia, dyslipidemia and lipotoxicity, chronic sub-clinical inflammation, unhealthy obesity, glomerular hyperfiltration and albuminuria. Renal histological changes associated with obesity (metabolically healthy or unhealthy) and early diabetic nephropathy are mostly unknown. The major limitation for studying early histological changes of obesity and diabetes is that renal biopsies are not performed due to ethical concerns. To solve this limitation, we propose the creation of a bio-bank of unaffected renal tissue of pieces of nephrectomy, to study the following points: (a) the histological pattern of renal damage in the whole spectrum of obesity (not only extreme obesity); (b) histological changes in healthy and unhealthy obesity with the same degree of BMI; (c) similarities in renal histology between early diabetes and metabolically unhealthy obesity; (d) the impact of metabolic factors on obesity-related renal damage; (e) possible pathogenetic pathways i.e. lipotoxicity or sub-clinical inflammation in obesity driven renal disease; (f) the prevalence of markers of chronic disease i.e. glomerulosclerosis, tubular and interstitial fibrosis in patients with obesity and early diabetes. This also will give the possibility of analyzing pathogenetic pathways involved in renal damage associated with these diseases.

### DETAILS OF THE FELLOWSHIP

1. **Duration of the fellowship:** 12 months

2. **Location of the hosting centre:**

University of La Laguna -

La Laguna, Tenerife Spain

Faculty of Medicine

Campus de Ofra, s/n, 38071 San Cristóbal de La Laguna,

Santa Cruz de Tenerife (Spain)

3. **Principal Investigator**

Esteban Porrini, MD

**Supervisor of the project**

Rosa Rodriguez, MD

4. **Start of the fellowship:** January 2021

5. **Qualifications and/or expertise required:**

Biologist with experience in renal pathology, morphometric evaluations, histological evaluation, different stainings i.e. inflammation, fibrosis, etc and lipidomic analysis.

### **GRANTED AMOUNT**

EUR 32,000

