

Progress report
Renal Pathology Center Chile
Hospital Valdivia, Renal Pathology Laboratory

Coordinators:

D. Carpio (pathologist)
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Report provided by:

Agnes Fogo (Chair Renal Pathology Committee)

1.- The absolute number of renal biopsies (native kidney and allograft biopsies) has a projected increasing of around 30% during this year (see attached number 1 diagram) mainly because we are receiving more samples from others cities of the country. It has been possible because the use of adequate fixation transport media, although we have had some minimal troubles with the samples' handling, because the confusion of the different fixatives, and shipping, because the different transport systems. This situation was resolved by sending an instructive to all Nephrologists.

Currently we are giving a renal biopsy diagnostic service to 6 out of 13 regions (states) of the country (see attached number 2 diagram). There is an agreement done with 3 other regions. Then we are expecting to receive samples this year from those cities (Antofagasta, Viña del Mar and Talca).

2.- The Laboratory of Nephrology has processed more than 1200 renal biopsies from public hospitals and from the Nephrologist's private practice of different cities of Chile. There are light microscopy slides, immunofluorescent digital pictures and electron microscopy photos files.

By now, we are doing a digital data system with the clinical and laboratory information of the patients, but the pathologic information is very difficult to keep and use easily. I guess we need a software able to do that efficiently, especially if we would like to make some statistic studies.

Therefore, we must create a data base with the referring Nephrologists and Urologists and to share results, comments and images in a web page.

3.- Currently, the Laboratory is taking part in some research projects:

a.- “Estudio de la transdiferenciación tubulo-epitelial en enfermedad renal progresiva. Rol de la proteinuria y Angiotensina II” (translation: “Tubule-epithelial transdifferentiation in progressive renal disease. Role of proteinuria and angiotensin II”), FONDECYT N° 1040163 (Chilean governmental grant). Sergio Mezzano, MD is the head of the project and Dr Carpio is a co-investigator.

b.- “Relación de Síndrome Diabético con la expresión y localización celular de Glicógeno sintetasa, Fosfoenolpiruvato Carboxinasa y Fructosa-1,6-Bifosfatasa, enzimas claves en la homeostasis de la Glucosa” (translation: “Relationship between Diabetic Syndrome and expression and location of glycogen sintetase, phosphoenolpiruvate carboxinase and fructose-1,6 biphosphatase, basic enzymes of glucose homeostasis”), FONDECYT N° 1051057. Alejandro Yáñez, PhD is the head of the project and Dr Carpio is a co-investigator.

c.- “Expresión de GREMLIN y BMP-7 como reguladores de fibrosis intersticial en pacientes proteinúricos y transplantados renales” (translation: “GREMLIN and BMP-7 expression as interstitial fibrosis regulators in proteinuric and renal transplant patients”), DID-UACH, N° S-2004-62 (University grant). Maria Alejandra Droguett, PhD is the head of the project and Dr Carpio is a co-investigator.

d.- “Daño estructural, bloqueo receptorial y estimulación del sistema calicreína-cinina renal: efectos sobre la sal-sensibilidad y el daño renal.” (translation: “Structural damage, receptorial blocking and stimulation of kallicrein-cinine system: effects in salt-sensitivity and renal damage”). DID-UACH, N° S-2006-70. Leopoldo Ardiles, MD is the head of the project and Dr Carpio is a co-investigator.

In addition to the research projects, the professional staffs have participated during the current year in several nephrology, transplant and pathology meetings, with more than 10 oral communications, posters and participation in symposium.

4.- There is some sort of collaborating studies with international institutions:

a.- “MSC recover renal function in type 1 and 2 diabetes.” Clínica Alemana-School of Medicine, Universidad del Desarrollo and Stem Cell Research Foundation. Paulette Conget, PhD is the head of the project. I will take part in the diagnostic of the progression of type 2 diabetes in mouse model by performing the pathological analysis using conventional light microscopy, histochemistry and electron microscopy.

b.- “ISN/RPS IgA Nephropathy Working Group”. Nephrology Laboratory of Valdivia in collaboration with Rossan Coppo and John Feehally, MD.

c.- Collaboration in experimental studies in different models with Marta Ruiz-Ortega and Jesús Egido, MD, Jiménez Díaz Foundation, Universidad Autónoma de Madrid, España.

d.- Collaboration in electron microscopy interpretation of difficult cases provided for the Electron Microscopy Center of FMC-Universidad Nacional de Córdoba, Córdoba, Argentina.

Also, one of our Medical Technologist, Maria Eugenia Burgos is currently doing a mini-sabbatical in the Nephropathology Laboratory of the University of North Carolina at Chapel Hill, under the supervision of J Charles Jennette, MD. She is learning some new histologic techniques and procedures, such as confocal microscopy and micro-array to apply subsequently when she comes back Chile.

Finally, we will receive a technician from Universidad de Zulia, Maracaibo, Venezuela who works with Bernardo Rodriguez-Iturbe, MD. She will spend a 1 or 2 months staying learning mainly immunohistochemistry, in situ hybridization and histochemical Southwestern.

5.- The Laboratory has been participating as well with several Schools of Medicine of different Chilean universities, mainly in Renal Pathology:

- Roxana Peralta, MD, resident of the Pathology Program of Universidad de Santiago, Chile, with a 4 weeks renal pathology training. She is actually coming back to her country, Peru.

- Tatiana Benavides, MD, resident of the Pathology Program of Universidad Austral de Chile, with a 4 weeks renal pathology training. She is currently working at the Hospital Valdivia Pathology Department as a general pathologist.
- Pablo Matamala, MD, resident of the Pathology Program of Universidad Austral de Chile, with a 4 weeks renal pathology training. He is currently doing the third year of residency.
- Oscar Pincheira, MD, resident of the Pathology Program of Universidad de la Frontera, Temuco, Chile, with a 4 weeks renal pathology training in November 2006.
- Gonzalo Toro, MD, resident of the Pathology Program of Universidad de la Frontera, Temuco, Chile, with a 4 weeks renal pathology training in November 2006.
- Residents of the Nephrology Program Universidad Austral: Alejandra Carrasco, Eric Zúñiga, Javier Ramírez and Fernando Pereira (from Colombia).

The residents have the chance to participate in light, immunofluorescence and electron microscopy, besides the diagnostic meeting and grand rounds in Nephrology and Pathology.

Finally, Jorge Mukdsi, MD, from Córdoba, Argentina, who did a post-doctoral training in electron microscopy, is doing a one year Renal Pathology training. He is currently in Vanderbilt University, Nashville, TN, making a 4 week Nephropathology training, through the ASN/SLANH program, which includes the attendance to the 2006 ASN Renal Week Meeting in San Diego. He also was beneficiary with the south-to-south ISN/SLANH fellowship award in order to finance a second year staying. He is involved in renal biopsy diagnosis and some experimental trials.

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