



## Editorial:

# GERIATRIC NEPHROLOGY: ITS PRINCIPLES AND AIMS

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Geriatric nephrology has emerged in response to three main phenomena: the increase in the number of aged people in the Western societies, the high impact of the aging process in the kidney structure and physiology and the current augment in the prevalence of chronic renal disease<sup>1</sup>.

Geriatric nephrology is a branch of Medicine that combine Gerontology, Geriatrics and Nephrology, with the objective of obtaining a better evaluation and treatment of the renal disease in the elderly, and also to provide a greater understanding of the renal senescence process<sup>1</sup>.

This new subject has been formed by different elements coming from each of its mother sciences:

Gerontology has given all the non-medical aspects of health in the elderly i.e. sociology and physiatry, and also all the information regarding the normal ageing process. Its main contribution to this new speciality has been the concept that the aging process consist of a loss of complexity and as a consequence of adaptability.

From the *general system theory*, an organism is a system that is constituted by other small ones (cardiovascular, respiratory, etc) which are called *microsystems* since they conform a bigger one or macrosystem. Then, *complexity* means all this microsystems

working harmoniously together. In accordance with that, an organism functions due to a coordination among their multiple microsystems, and this coordination or *complexity* makes the organism flexible and capable of overcoming environmental changes. The senescence process weakens the body microsystems and the coordination among them undermining *complexity* and making the person frail. This is the reason why old people are easily exposed to opposite derangements due to different mechanisms: they are prone either to dehydration or water overload indistinctly<sup>2</sup>.

- Nephrology has contributed its knowledge regarding clinical nephrology, dialysis, and kidney transplantation; reaffirming the concept that the old persons, just because of his/her age, must not be excluded from any of the diagnostic and therapeutic options offered by nephrology<sup>1</sup>. Avoiding in that way the *etarism*.

However, it should also avoid the futility, it means the implementation of diagnostic methods and/or treatments which far from helping the patients can damage them<sup>3</sup>.

- Geriatrics has given its approach from a different standpoint that adds to Nephrology all its multidisciplinary focus, as well as the Geriatrics principles<sup>1</sup>:

- 1) Biological age is more important than chronologic age.
- 2) To avoid the *etarism*. Old age does not mean undertreatment.
- 3) To avoid the futility: to do all the medically possible does not always mean to do all the medically correct
- 4) A patient has three dimensions: patient-family-society.
- 5) Because the patients usually suffer from many diseases simultaneously, you must give priority to the most important ones.
- 6) Mortality reduction is not the only therapeutic objective, but it is also to obtain good-quality of life.
- 7) You must have the capability to recognize and treat the syndromes named by Dr Isaacs as the " Geriatrics Giants ", because they affect many elderly and the produce great problems. These syndromes are: cognitive impairment, gait disorders and falls, immobility, fecal and urinary incontinence.
- 8) Keep into account the atypical presentation of the diseases. In Nephrogeriatrics we could also describe the "Nephrogeriatrics Giants": structural and physiological frequent characteristics of the old kidney, that influence in the nephropathy evolution and therapeutical strategies<sup>1</sup>.

These are the Nephrogeriatrics Giants:

- 1) Senile Hypofiltration: Consists of the tendency to a progressive glomerular

**filtration reduction due to the senescence process. It starts around age thirty and it has a declination rate of about 1 ml per year.**

**2) Medullary Hypotonicity: The kidney medulla in old persons usually has less tonicity with respect to the younger people. That phenomenon produces a reduction in the antidiuretic hormone effect, and as a consequence a reduction in the water reabsorption capability.**

**3) Renal Artery Atherosclerosis: Consists of atheromatosis of the renal vessels that can cause ischemic nephropathy, and or intrarenal atheroembolic events.**

**4) Tubular Frailty: Renal tubular cells in the elderly suffer more easily any noxa (ischemic or toxic) and they also have a slow recovery from an acute tubular necrosis.**

**5) Uro-obstruction: This is a very frequent renal failure mechanism in the elderly. Genital tract diseases, in both gender, are the most frequent causes.**

**6) Tubular Dysfunction: It is the tubular management reduction of several substances. Old persons have a tendency to a reduced secretion of potassium and to a reduced reabsorption of urea, sodium, calcium and magnesium.**

**7) Renal Vascular Dysautonomy: There is a defect in the autonomic renal vascular reflex that protects the kidney from hypotensive and hypertensive states.**

## **CONCLUSION**

**Geriatric nephrology has emerged in response to the current modifications in the morbid-mortality and composition of the modern societies.**

**It is our responsibility to work for developing this medical speciality in a frame of high humanistic and scientific level.**

## **REFERENCES**

- 1.- Musso CG. Geriatric nephrology and the "nephrogeriatric giants". *Internacional Urology and Nephrology* 34: 257-264, 2002.**
  - 2.- Macías Núñez JF, Cameron S. The ageing kidney. En Cameron S (Ed). *Oxford Textbook of Clinical Nephrology*. Oxford. Oxford University Press. 2006**
  - 3.- Musso CG, Enz P. Bioética en geriatría: etarismo y futilidad: navegando entre Escila y Caribdis. Buenos Aires. *Revista del Hospital Italiano de Buenos Aires* (en prensa)**
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