

# Archivi storici della Nefrologia Italiana: La storia della strumentazione in nefrologia Parte I: basi teoriche

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## Riassunto

La storia della strumentazione medica come parte integrante della medicina conferma che la scienza progredisce per costruzioni di teorie e per eliminazioni di errori. E ciò vale per la strumentazione diagnostica e curativa.

Nel campo della nefrologia ciò si applica al microscopio, strumento principe nella diagnosi istologica e al rene artificiale strumento emblematico della teoria sostitutiva.

La strumentazione dell'intera medicina è stata fino al XVII secolo essenzialmente di tipo curativo e solo successivamente anche diagnostico. L'assenza di strumentazione diagnostica ha favorito l'emersione di impalcature teoriche basate più sull'autorità di chi le emetteva che sulla possibilità di controllarne l'attendibilità.

L'invenzione di apparecchi diagnostici dà avvio ad una concezione dello strumento come estensione dei sensi – il microscopio fa vedere ciò che all'occhio nudo è precluso.

Lo strumento cominciò ad essere considerato anche un mezzo per liberarsi dagli "inganni" dei sensi. Esso assume la fisionomia della sicurezza, della verità, della realtà e si colloca all'opposto di ciò che i sensi possono dare di ingannevole e di illusorio.

*PAROLE CHIAVE: Strumenti nefrologici, Teorie, Epistemologia*

## **Historical Archives of Italian Nephrology: The history of instrumentation in nephrology. Part I: Theoretical bases**

*Microscopes and artificial kidneys have greatly influenced both diagnosis and therapy of renal diseases. Nonetheless, in tracing the influence of instrumentation on nephrology, as revealed by daily activity, we have to recognise the influence of science upon medical instruments.*

*It is for this reason that, besides strictly clinical factors, the scientific factors that contributed to the development of modern nephrology have received considerable attention. Nobody can use an artificial kidney without bearing in mind the contribution of many segments of science. Each segment has a hypothesis in its historical growth, development and decline. The notion that the advancement of science was made possible by the increasing reliance measurements and other quantitative procedure is hardly a novel one. Moreover, it is rather obvious that the experimental process and the use of instrumentation played an important role in the history of nephrology. Measurements, experiments and the use of instruments were interrelated and represented many phases of the improvements made in diagnosis and therapeutics. Naturally, in the history and epistemology of nephrology instrumentation we find conceptual mistakes and erroneous approaches to the biological reality. However, according to Popper's teachings, mistakes are good for science as they give an extra kick to its growth and development.*

*Medical instrumentation is an assembly of scientific theories; it also controls medical theories and promotes the development of new ones. In addition, it changed our approach to the patient. In the pre-physical era, medical practice was almost entirely an intellectual process based on medical theories that the patient was not expected to understand. In the period of physical examinations the physician included the sensual dimension (oral and visual process) and made direct contact with the patient. In the instrumentation period we experience the third type of examination, in which the physician went back to the position of having less contact with the patient. This separation is reminiscent of the pre-physical diagnosis. (G Ital Nefrol 2002; 19: 571-4)*

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