

IFCC Task Force on Chronic Kidney Disease (Integrated Project) – (TF-CKD) special issue

Guest editors: Flavio F. Alcantara¹, Vanja Radišić Biljak²

¹ Central Laboratory Division, Clinical Hospital, University of São Paulo, Medical School, Brazil

² Department of Medical Biochemistry and Laboratory Medicine, Merkur University Hospital, Zagreb, Croatia

ARTICLE INFO

Corresponding author:

Flavio F. Alcantara
Hospital das Clínicas
Av Eneas Carvalho Aguiar
155. Bloco 4, 2o andar
Sao Paulo 05403-000 SP
Brazil
Phone: +55 11 2661 7275
E-mail: flavio.alcantara@hc.fm.usp.br

Key words:

Chronic Kidney Disease (CKD),
IFCC TF-CKD, KDIGO 2012 guidelines

EDITORIAL

This series of articles is a milestone not only for the International Federation of Clinical Chemistry and Laboratory Medicine (IFCC) and the World Association of Societies of Pathology and Laboratory Medicine (WASPaLM) Task Force on Chronic Kidney Disease (TF-CKD) integrated project, but also an important outline on the role of the laboratory on assessment of the renal function in different scenarios. It sheds light on several aspects of the field, from basic research to daily clinical practices, uniting many IFCC member countries working with different aspects of the laboratory in CKD care.

In the initial article “We have come a long way” (1), a brief history of the Task Force is narrated. The IFCC leadership with WASPaLM partnership formulated a TF which amalgated the two major International scientific societies in Laboratory Medicine. The initial idea of “forging a global consensus” has shifted onto “helping to create and implement national guidelines in each country through corresponding members”, and later using the KDIGO 2012 guidelines (2) as a frame document.

IFCC has succeeded in gaining acceptance as a global partner for CKD care (3).

KDIGO 2012 guidelines classifies CKD based on cause, Glomerular Filtration Rate (GFR) category, and albuminuria category (CGA) (2), thus emphasizing the role of laboratory medicine in management of CKD. One of the major laboratory tests involved in CKD management is certainly creatinine and consequently estimation of GFR via estimating equations (2). The group of authors on behalf of the Société Française de Biologie Clinique in the article “Did creatinine standardization give benefits to the evaluation of glomerular filtration rate” (4) evaluate some limitations of creatinine and emphasize the importance on using IDMS traceable enzymatic assays and the reporting of eGFR.

Regarding albuminuria measurement, the article “Moving Toward Standardization of Urine Albumin Measurements” (5) reports on the continuing effort undertaken by the NKDEP Laboratory Working Group following their success on the standardization of creatinine measurement. It mentions their work on pre-analytical issues, the current state of measurements evaluating their precision and accuracy, the strategy undertaken defining a candidate reference method and for producing certified reference materials, including an evaluation of several albumin methods as previously published (6).

KDIGO 2012 guidelines also recognize the value of estimating GFR using Cystatin C measurements as a biomarker alternative to creatinine (2). In the article “Cystatin C is indispensable for evaluation of kidney disease” (7) a good case is made for using Cystatin C instead of other biomarkers for GFR. In fact, given their expertise, the Swedish have realized the importance of using both $eGFR_{crea}$ and $eGFR_{cysC}$, providing not only the best estimate GFR, but more importantly, yielding the mean $eGFR_{crea}$ and $eGFR_{cysC}$ value. This $eGFR_{mean}$, when in close agreement with each of the single eGFR results, is the best evaluation of GFR; in situations where the disagreement is above $\sim 1/3$ ($eGFR_{cysC} \leq 60\% eGFR_{crea}$), the decreased

cystatin C filtration signals the presence of the recently described “Shrunken Pore Syndrome”, predicting increase in mortality and morbidity while elucidating key pathophysiologic aspects on kidney diseases.

Nevertheless, neither creatinine nor Cystatin C present the ideal marker for estimating GFR. The “Novel Filtration Markers for GFR estimation” (8) article includes an update on the past and present research on two Glomerular Filtration Rate markers: the 11.8 kDa Beta Trace Protein (BTP) and the 23-29 kDa Beta 2 Microglobulin (B2M), some equations designed for their use in GFR estimation and the experience in specific patient cohorts using these markers, comments on approaches using panels of markers such as $eGFR_{crea}$, $eGFR_{cysC}$, $eGFR_{BTP}$, and $eGFR_{B2M}$. Additionally, there is a glimpse on the use of metabolomic on studies searching for markers associated with $eGFR_{crea}$.

“A pathway to national guidelines for laboratory diagnostics of chronic kidney disease – examples from diverse European countries” take us on the path travelled by several countries toward improvement of CKD care (9). Various scenarios on developing and implementing national CKD guidelines are described, ranging from as early as 2002 when the Société Française de Biologie Clinique (SFBC) formed the “Creatinine Working Group”, later joined by Société de Néphrologie, until 2017 and releasing the newest recommendations from Croatian Working Group for Laboratory Diagnostic of CKD.

The last article of the series “A summary of worldwide activities in chronic kidney disease (CKD) testing” (10) includes examples of countries with different settings. National CKD activities from almost every continent are presented, which makes the very first step in achieving the national CKD guidelines as a final goal.

A world of CKD has been depicted and different activities have been summarized. Unfortunately,

a lot has not been told and several fundamental authors and settings were not included, due to time and space constraints. Still, different levels of maturity on CKD care can be grasped upon. In laboratory, the saying goes that “quality is not an end point but a journey”, we hope the road ahead may now have some additional marks for the travelers.

REFERENCES

1. Jones GRD. Task Force on Chronic Kidney Disease – We have come a long way. eJIFCC
2. Kidney Disease: Improving Global Outcomes (KDIGO) CKD Work Group. KDIGO 2012 clinical practice guideline for the evaluation and management of chronic kidney disease. *Kidney Int Suppl.* 2013;3(1):1-150.
3. Levin A, et al. Global kidney health 2017 and beyond: a roadmap for closing gaps in care, research, and policy. *Lancet* 2017; 390: 1888–917.
4. Piéroni L, Bargnoux AS, Cristol JP, Cavalier E, Delanaye P. Did creatinine standardization give benefits to the evaluation of glomerular filtration rate? eJIFCC.
5. Seegmiller J, Miller WG, Bachman LM. Moving towards standardization of urinary albumin measurements. eJIFCC.
6. Bachmann LM, Nilsson G, Bruns DE, McQueen MJ, Lieske JC, Zakowski JJ, and Miller WG. State of the Art for Measurement of Urine Albumin: Comparison of Routine Measurement Procedures to Isotope Dilution Tandem Mass Spectrometry *Clin Chem* 2014;60(3):471–480.
7. Grubb A. Cystatin C is indispensable for evaluation of kidney disease. eJIFCC.
8. Karger AB, Inker LA, Coresh J, Levey AS and Eckfeldt JH. Novel filtration markers for GFR estimation. eJIFCC.
9. Radišić Biljak V, Momberg Aakre K, Yucel D, Bargnoux AS, Cristol JP, Pieroni L. A pathway to national guidelines for diagnosis of chronic kidney disease – examples from diverse European countries. eJIFCC.
10. Ruiz-Arenas R, Sierra-Amor R, Seccombe D, Raymond S, Graziani MS, Panteghini M, Adedeji TA, Kamatham SN, and Radišić Biljak V. A summary of national activities in Chronic Kidney Disease CKD testing. eJIFCC.