TF-CKD special issue: The laboratory diagnostics of chronic kidney diseases

The Journal of the International Federation of Clinical Chemistry and Laboratory Medicine

eJIFCC

Task Force on CKD – we have come a long way

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ARTICLE INFO

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Key words:
urine albumin, reference measurement procedure, standardization, calibration

ABSTRACT

Chronic Kidney Disease (CKD) is an important medical condition where diagnosis, staging and monitoring is largely based on routine laboratory tests. During the last 15 years there have been many important changes in the clinical management of CKD described in key international guidelines. In order to successfully implement these guidelines, laboratories must collaborate with clinicians to provide a co-ordinated service, including accurate measurements and of creatinine and urine albumin and reporting of an estimated glomerular filtration rate (eGFR). The IFCC/WASPaLM Task Force on Chronic Kidney Disease (TF-CKD) was established in 2008 and since that time has worked to improve laboratory testing in CKD. Key aspects of the work of the TF-CKD include supporting national laboratory medicine organisations to develop CKD testing guidelines, recognition of the vital role of collaboration between laboratory and clinical organisations, the importance of accurate measurements, and endorsement of the KDIGO 2012 CKD guidelines. A key function of the TF-CKD has been to facilitate sharing and learning between countries to provide the best outcomes.

INTRODUCTION

One of the great ways that progress is made is through the power of people working together. The current practices for laboratory testing for Chronic Kidney Disease (CKD) in many countries is the product of many different collaborations. The players involved in these collaborations include laboratory scientists, chemical pathologists, nephrologists, general practitioners, researchers, diagnostic manufacturers and many others. Often the mechanism for these collaborations is through professional societies and other organised structures.

I believe the IFCC Task Force on Chronic Kidney Disease (TF-CKD) has played an important role in promoting good laboratory practice in this field through collaboration on a range of levels. In this paper I outline the activities of the TF-CKD and its role in laboratory testing for CKD.

For this purpose I will consider three separate aspects: the formation and early years; the recommended approach to organising CKD testing; and the effects of sharing.

A BRIEF HISTORY OF THE TF-CKD

The TF-CKD was formed in 2008 on the initiative of then IFCC President Mathias Müller who recommended the formation of a Working Group on Screening for Chronic Kidney Disease (WG-CKD). The members of the WG included laboratory scientists, nephrologists and a chemical pathologist. In 2009 the terminology was changed to "Task Force" (TF-CKD) and an invitation was extended to the World Association of Societies of Pathology and Laboratory Medicine (WASPaLM) to be a joint sponsor of the TF, recognising the importance of pathologists as well as laboratory scientists and with the aim of getting the widest professional and organisational coverage. The invitation was accepted and the initial full membership is shown in Table 1.

These members had experience with developing and implementing CKD testing guidelines, in research in the field of CKD testing, of the measurement of serum creatinine and in the clinical application of the laboratory tests. Importantly the membership also had key roles in clinical, research and guideline organisations outside the

Table 1 WG-CKD initial membership

IFCC Nominees	
Graham JONES (AUS)	Joe CORESH (USA)
Edmund LAMB (UK)	Andy NARVA (USA)
David SECCOMBE (CAN)	Mauro PANTEGHINI (IT)
Joris DELANGHE (BEL)	
WASPaLM Nominees	
John ECKFELDT (USA)	Adagmar ANDRIOLO (BRA) *(replaced by Flavio ALCANTARA (BRA) during 2010)*

laboratory medicine community allowing communication and collaboration. The membership remained very similar for the first six years and some original members remain active today.

The following **Terms of Reference** were adopted at the first meeting:

- To achieve global consensus on the laboratory strategy (including reporting) for the identification, diagnosis, and monitoring of chronic kidney disease.
- To collaborate in the preparation of international diagnostic guidelines with relevant clinical organisations by providing guidance on laboratory aspects of chronic kidney disease testing.
- To facilitate the guideline implementation within IFCC member organizations and reach improvement over the current situation.

EARLY ACTIVITIES OF THE TF-CKD

While the initial plans for the TF-CKD were aimed at preparing a global guidance document, the first major activity was a survey of current practice in laboratory testing related to CKD. At that time the latest international guidelines were the United States National Kidney Foundation Kidney Disease Outcome Quality Initiative (K/DOQI) 2002 guidelines which provided, amongst many items, a clear definition of CKD and also recommended routine reporting of an eGFR with serum creatinine (1). The survey was conducted in 2010 and distributed amongst IFCC and WASPaLM member organisations with 25 responses with the aim to assess uptake of the K-DOQI recommendations. It is likely that the results were skewed to countries with an interest in the topic. Of the respondents 42% had national guidelines on eGFR reporting, with the guidelines being produced either by, or in collaboration with a renal medicine organisation. Fewer than half the responding countries estimated that over 80% of laboratories routinely reported an eGFR and many were using creatinine assays which were not aligned to the reference method (isotope dilution mass spectrometry, IDMS). A key feature was a strong positive reaction to questions about willingness to share experience and to receive assistance in this area.

Members of the Task Force were also independently active in developing guidelines in their own countries, speaking at national and international meetings, and with involvement in research on laboratory and clinical issues. For example, in 2011 Task Force members presented at meetings in Berlin, China, Malaysia and Mexico.

ORGANISING CKD TESTING

As stated above, the original goals of the TF-CKD included “to achieve global consensus on the laboratory strategy (including reporting) for the identification, diagnosis, and monitoring of chronic kidney disease.” However over time it became apparent to the membership that CKD testing programs are best organised at the national rather than global level. The examples of structured CKD testing that were in place were organised at the national rather than the international level. For example by 2010 the survey showed that at least nine countries were known to have national CKD testing programs. Other organisational categories may be regional (a number of countries acting together) or at a state or provincial level within a country. There are many reasons for thinking that way. Firstly the available resources, including laboratory facilities, doctors, medicine, are often very different in different parts of the world. Importantly an organisational structure is required to formulate then implement change. The relevant structures include laboratory and clinical professional organisations, medical education (pre- and post-graduate), medical and laboratory funding and governments.

Thus the recommendation of the TF-CKD became to assist countries (or regions or states) to develop and implement CKD testing programs, as opposed to recommending the same approach for everyone. The issues that need to be considered can be addressed by, and owned by, local organisations and people. The role of the TF-CKD then is to support these national activities.

The other major international event in the field of CKD was the publication of the Kidney Disease Improving Global Outcomes (KDIGO) 2012 Guideline on the diagnosis and management of CKD (2). It is hard to overestimate the quality and importance of this document in the field of CKD testing and management. Building on the 2002 KDOQI guideline, it contains a balanced and evidence based-approach to achieving the aims in the document title. Importantly it also describes key aspects of laboratory testing including creatinine standardisation, eGFR reporting and interpretation and urine albumin measurement. The document also provides a way of approaching the data, for example recommending the use of the CKD-EPI formula for estimation of GFR, unless there is evidence that an alternative formula can improve the accuracy of the result. The use of a common guideline to support both clinical and laboratory activities ensures that laboratory testing is supportive of the clinical goals in caring for patients with kidney disease.

In response to the publication of this document, the TF-CKD formally recommended that any CKD testing programs should be based on this document. To put these last two items together, the TF-CKD, in 2013, recommended that CKD testing programs should be organised nationally, using the 2012 KDIGO guidelines as a basis with changes as required for local adoption.

SUPPORT FOR NATIONAL ACTIVITIES

The original membership of the TF-CKD was limited to individuals with known expertise in the area. In 2012 the concept was raise of inviting “corresponding members” from as many member organisations as wished to join. A corresponding member needed to have an interest in the field and the support of the relevant national biochemistry or pathology organisation. The effect of this was to markedly expand the membership and include people with an active interest, but possibly limited specific knowledge in the field.

One assessment of this expansion is that it has produced the greatest effects of the TF-CKD. By becoming a member and participating at meetings and in e-mail discussions, there was an opportunity to learn and then facilitate activities in the home country. A key example of this approach in action was the TF open meeting held at the Paris IFCC congress in 2015. The format of the meeting was presentations from members about the state of progress in CKD testing in their home country. There were presentations from thirteen countries from six continents enabling a period of sharing experiences and creating new contacts. The countries presented were at many stages of the process of developing or implementing CKD guidelines. Following on from this meeting members have played key roles in the development of CKD guidelines in Croatia (3) and Turkey (4).

In an offshoot from the TF-CKD, a similar process has started under the auspices of the Asia Pacific Federation of Clinical Biochemistry (APFCB). At their regional meeting in Taiwan in 2016, a meeting of national representatives of seven Asian countries again shared experiences and challenges in the area.

THE FUTURE OF THE TF-CKD

With the rise of the numbers of corresponding members, as well as corporate representatives, in 2017 the TF includes 26 members representing 23 countries (5).

There remains much work to be done. A recent international survey by the International Society of Nephrology has indicated that measurement of serum creatinine with eGFR reporting was either not available or only rarely available in 63% of countries worldwide, and creatinine alone either not available or only rarely available in 35% of 119 countries assessed (6). A follow-up paper has identified the IFCC as a partner organisation for improvement in laboratory testing in CKD (7).

There also persists a need for activity to promote improvements in assay quality. Specifically creatinine is the basis of GFR assessment in most of the world and clinicians rely on laboratories for quality results. While the quality of assays used in the developed world has improved markedly, in the developing world it is often difficult for a laboratory scientist to even identify whether a creatinine assay is traceable to international standards (8).

I believe that the TF-CKD has been, and will continue to be an active force for change in improving the use of laboratory testing to identify and manage patients with CKD. The mechanisms are to promote the development of appropriate national programs through collaboration of laboratory medicine and other organisations. This assistance may be through providing a list of issues to address, partnering with individual countries, advising on the processes or technical issues, providing guest speakers or other ways.

It has been my pleasure to be involved in CKD testing for over 12 years during which it is fair to say the world has changed (9). The improvement of laboratory medicine is an adventure we all should play a part in.

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