

Chronic Kidney Disease or Chronic Kidney Injury or Chronic Kidney Insufficiency?

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Abstract:

This publication provides a review on difficulties in the terminology interpretation and formulation of clinical diagnosis within the concepts of CKD that exist in clinical practice.

This article describes the features of hypertension, as well as average rates of blood pressure and methods of identifying of risk factors for hypertension among young adults in Uzbekistan. This article describes the features of hypertension, as well as problems identifying of risk factors and early diagnosis of hypertension among young adults in Uzbekistan.

Keywords: chronic kidney disease, chronic kidney injury, terminology, National Kidney Foundation, clinical practice, KDIGO guidelines, clinical diagnosis.

Introduction

It would be worth mentioning in advance that chronic kidney disease (CKD) as a specific nosological unit with established etiology basically does not exist. The term of chronic kidney disease (CKD), proposed by the U.S. National Kidney Foundation (NKF) is inappropriate and very flawed by its definition, rather putting additional terminological confusion in this already complicated situation that evolved over the years in the foreign, especially American literature, devoted to the problem of chronic renal failure (CRF).

By the time of the introduction of a new term (2002) in the literature has existed for more than 10 terms used to refer to chronic renal failure. Availability in English language of synonyms- kidney and ren, and consequently kidney failure and kidney insufficiency also contributed variety of different options in terminology and concept itself used to define CRF as one of the leading syndromes in nephrology and urology.

Thus, there were objective reasons for the emerging of a new concept, both in terms of terminology and the real need to create some simple criteria for the unified treatment strategy of renal damage developing under this condition or any other underlying disease. As a result, the concept of CKD

established by the NKF, was all about to eliminate the variety of terminology used to describe the syndrome of chronic renal failure on the one hand, as well as, the very concept of chronic renal failure itself, which is difficult to accept. The concept of CKD (2002) in recent years has been widely acknowledged in medical society. In some countries, such as Russia (2012), for instance, on its basis were established National recommendations [2]. As a result, there has been a tendency to put up CKD term before any nosological unit, bringing it in first position in the clinical diagnosis. However, individual attempts of some authors [3] to give the up-nosological status to the concept of CKD by analogy with CHD (Coronary/ Ischaemic Heart Disease) looks less than unconvincing.

The concept of CHD (Coronary/ Ischaemic Heart Disease) clearly refer to the condition developing mechanism, i.e ischemia, whereas in the case of chronic kidney disease is mentioned only character of the flow i.e chronic. Obviously, there is no point for drawing these parallels, as of indication of CKD before the clinical diagnosis and the underlying disease as well, which is in no way can be justified. It is no coincidence that in the recent KDIGO recommendations, 2012 is stressed the need to establish the nosological diagnosis as the

primary pathology and including it to the concept of CKD [4]. In the Russian national guidelines also recommended indicating CKD stage just after the main nosological diagnosis and no way in front of it. [2]

In the terminal end-stage renal disease (ESRD), when it becomes necessary renal replacement therapy (hemodialysis, peritoneal dialysis, renal transplant) the point of bringing CKD on the right place in the clinical diagnosis is not critical to the fate of the individual patient. The situation is whole different in the early stages while there is intact total or slightly decreased kidney function. In this occasion, stopping or slowing the progression of the disease as nosological unit is a subject of uppermost concern and it is crucial for further choice of treatment regimen. It is the etiological and to a lesser extent other (pathogenetic, symptomatic) approach to treatment of any disease that is the most effective and efficient. In exceptional cases, when there is no indication of an underlying disease or associated comorbidity during clinical assessment it is allowed to bring the syndrome of CKD in the first place until the completion of the final diagnosis. [2]

Therefore, calling the disease, which is basically is not, but only more or less comprehensively reflects the dynamics of organ function loss is hardly recommended. Especially in the situation when the diagnosis of the disease is mainly determined on the basis of actually one parameter-blood creatinine concentration and several anthropometric, racial and ethnic (CKD-EPI, 2011) patient data used in mathematical formulas to define the glomerular filtration rate (GFR) as the best overall measure of kidney function and excluding other important indicators, such as minute, hourly, daily diuresis, urine specific gravity in the morning, a single, random urine samples, its swing during the day and indicators of tubular reabsorption, etc.

As a result, the concept of CKD generally ignored the possibility of development kidney dysfunction on tubular and mixed variants. However, well-known is the fact that kidney function loss may occur with a primary lesion of the glomerular (glomerulonephritis) and/ or tubular apparatus (interstitial disease). If in the final terminal stages of CKD it does not matter, however, then in its early stages the diagnosis itself, character of the flow and progression speed requires different treatment tactics which is vary considerably and may be crucial to the outcome.

It is not accidentally, that along with the evaluation of blood creatinine concentration, the level of urine specific gravity, as in a single analysis, and the samples of Zimnitsky probe is highly indicative and is of ultimate importance for the evaluation of kidney function at all variety of

options which is available for digital interpretations of specific gravity. [5] Therefore, in the Russian national guidelines [2] in the section "The main indications for outpatient nephrology consultations" quite reasonably appeared brief mention including inappropriate concentrating kidney disorder, tubular disorders (nycturia-excessive urination at night, polyuria-excessive urination volume, hyposthenuria- persistent depression of urine specific gravity).

In conclusion, it should be noticed that most of the key issues presented in the concept of CKD (NKF, 2002), was raised, discussed and found a successful solution much earlier (by as much as 27 years), back in 1975 in the classification of chronic renal failure [6,7] proposed by two Russian physicians S.I.Ryabov and B.B.Bondarenko.

Conclusions:

1. Chronic kidney disease (CKD), as nosological entity does not exist. This concept is rather pathophysiological, pathogenetic but not nosological, especially not up-nosological.
2. Use of term "disease" in the concept of CKD is incorrect and brings confusion in understanding of an essence, the place and role of the underlying condition, as well as, in the determining of medical diagnosis ("disease in the disease").
3. The concept of CKD implies measuring a kidney failure rates, not a disease as a specific clinical entity. Thus, it is actually about a chronic kidney injury (CKI) which developing is associated with multiple of comorbidities and interrelated diseases within the underlying condition.
4. The principles embodied in the concept of CKD unilaterally assess the extent and nature of kidney function loss.
5. Calculated serum creatinine clearance assessment methods - the Cockcroft-Gault, MDRD, CKD-EPI equations measure exceptionally functional state of renal glomerular filtration apparatus.
6. Diagnostic capabilities to determine the degree of functional disability of nephrons flowing through the tubular or mixed option in the concept of CKD is not clarified.
7. The term of CKI (Chronic Kidney Injury) by analogy with AKI (Acute Kidney Injury) is more accurate, devoid of internal contradictions and shortcomings inherent in concept of CKD (Chronic Kidney Disease), simple, yet effective and clear in use.

The term of CKI (Chronic Kidney Injury), as previously CRF (Chronic Renal Failure) determines medical specialists narrow profiled in this field, specifically nephrologists and urologists and other healthcare professionals as cardiologists, endocrinologists, surgeons involved in the care and support of patients with kidney diseases, to search the etiology of the disorder or underlying pathological cause of dysfunction, i.e disease as nosological unit, and not non-existent CKD (Chronic Kidney Disease).

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