


Correspondence



Letter to the Editor: Chronic Kidney Disease - a Neglected Disease in the Economic Conditions Burden Analysis in Korea

Boris Bikbov  and on behalf of the Global Burden of Disease Study Genitourinary Disease Expert Group

Istituto di Ricerche Farmacologiche Mario Negri IRCCS, Bergamo, Italy

OPEN ACCESS

► See the article “Measuring the Economic Burden of Disease and Injury in Korea, 2015” in volume 34, Supplement 1, e80.

Received: Jun 17, 2019

Accepted: Jul 7, 2019

Address for Correspondence:

Boris Bikbov, MD, PhD

Istituto di Ricerche Farmacologiche Mario Negri IRCCS, Via G.-B. Camozzi 3 – 24020, Ranica, Bergamo, Italy.
E-mail: boris@bikbov.ru

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ORCID iDs

Boris Bikbov 

<https://orcid.org/0000-0002-1925-7506>

Disclosure

The author has no potential conflicts of interest to disclose.

We appreciate the wide range of 238 disease and 22 injury coverage and the important related estimates of economic burden of these conditions in Korea produced Lee et al.¹ However, we would like to underline the important shortcoming in estimates of chronic kidney disease (CKD) burden. The authors reported cost of top-20 conditions, in which the alcohol use disorders ranked 20th with 1.9 billion USD total cost in 2015 (as reflected at **Fig. 2**). The available literature evidence suggests the burden of CKD far exceeds this threshold, and thus it has to be presented among the top diseases having highest burden in Korea.

In December 2015 in the South Korea there were 87,014 patients receiving renal replacement therapy (RRT),² which had exceptionally high treatment cost.³ Among all RRT patients there were 62,634 individuals receiving hemodialysis, 7,352 individuals treated by peritoneal dialysis, and 17,028 individuals with functioning kidney graft² with estimated direct cost 34,554 Euro (39,046 USD), 25,806 Euro (29,160 USD), and 35,765 Euro (40,414 USD) per one year of treatment, respectively.³ Calculations with aforementioned numbers suggest that only direct cost of RRT treatment claimed to 3.3 billion USD. Among a whole spectrum of kidney diseases, the RRT represents only relatively small fraction of therapy for the most advanced stages. However, the earlier CKD stages (i.e., CKD stages 1-4 not requiring RRT) are much more prevalent, and being reported in 7.9% of adult participants of the fifth Korean National Health and Nutrition Examination Survey.⁴ In a nation-wide scale this percentage could be extrapolated to almost 3.2 million individuals with CKD, and the Korean National Health Insurance statistical Yearbook reported almost 160,000 hospital visits due to CKD in 2014.⁵ Direct cost for CKD stage 3 was estimated as 1,205 Euro (1,361 USD), and for CKD stage 4 as 1,962 Euro (2,217 USD) per year,³ while there are no published cost estimates of management for patients with even earlier CKD stages defined by detection of albuminuria only and grade 1 or 2 of glomerular filtration rate.

The aforementioned available data suggest the total annual cost of CKD far exceeds 5 billion USD, and thus should be reflected among the top ranked disease in Korea. We believe that accounting chronic kidney disease among the priorities of public health agenda is crucial for applying effective prevention and treatment strategies, and would suggest to consider high burden of CKD in the economic health analysis performed in Korea or in any other country.

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doi: <https://doi.org/10.3346/jkms.2019.34.e221>

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Response



The Author's Response: Economic Burden of Chronic Kidney Disease in Korea

Ye-Rin Lee and In-Hwan Oh

Department of Preventive Medicine, School of Medicine, Kyung Hee University, Seoul, Korea

Received: Jul 31, 2019

Accepted: Aug 2, 2019

Address for Correspondence:

In-Hwan Oh, MD, MPH, PhD

Department of Preventive Medicine, Kyung Hee University School of Medicine, 26 Kyungheedaero-ro, Dongdaemun-gu, Seoul 02447, Korea.
E-mail: parenchyme@gmail.com

ORCID iDs

Ye-Rin Lee

<https://orcid.org/0000-0002-4507-4877>

In-Hwan Oh

<https://orcid.org/0000-0002-5450-9887>

Economic burden of size and ranking could differ based on how a specific disease is defined or classified. Our analysis was conducted as part of the Korea National Burden of Disease (KNBD) study. Therefore, the study used the disease classification system and definition provided by the KNBD study.^{1,2}

In the study, the medical cost was classified by primary International Classification of Disease code of each case. In case of chronic kidney disease, the medical cost of chronic kidney disease (CKD) did not include the medical cost due to kidney failure (N17, N18, and N19), which is different from productivity loss due to premature death. In the KNBD study, CKD included CKD due to diabetes mellitus (E102, E112, etc.), hypertension (I120, I130), etc.; the 2010 study of global burden of disease (GBD) also classified kidney failure (N17–N19) as the “garbage code.”²⁻⁴

Furthermore, when claims data of national health insurance service were used to term the disease, each disease was defined by the number of medical uses and procedural code was not

Funding

This research was supported by a grant of the Korea Health Technology R&D Project through the Korea Health Industry Development Institute (KHIDI), funded by the Ministry of Health and Welfare, Republic of Korea (No. HI18C0446).

Disclosure

The authors have no potential conflicts of interest to disclose.

used. For example, the cost of individuals who admitted in hospitals for CKD at minimum one time or visited outpatient clinic three times per year only was included.³ Therefore, the cost of CKD could be different than that in the other studies.

The economic burden of CKD is very important; in particular, a small group loads big economic burden. Consequently, it attracts high political concerns. From this point of view, measuring the burden of CKD including renal failure could help in policy intervention. Therefore, changing and extending the CKD could be considered in further studies.

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