Letter to Editor

Is renal microvascular disease a reversible process in chronic kidney disease?

Therapeutic strategy under present practice in chronic kidney disease (CKD) fails to restore renal function, but simply slows the renal disease progression [1]. Recent studies explain such unsuccessful therapeutic strategy to restore the renal function due to the defective mechanism of vascular repair associated with balance between Ang-1 and Ang-2 in favor of Ang-2 [2, 3]. Impaired angiogenic factors and endothelial progenitor cell have been observed repeatedly in the late stage of CKD, whereas antiangiogenic factors, namely Ang-2, have been elevated, resulting in progression of renal microvascular diseases [2-4]. Treatment, in general, usually initiates at the late stage of CKD due to the insensitiveness of the available diagnostic markers such as serum creatinine, or microalbuminuria determination [5]. Impaired angiogenic factors would favor the progression of vascular injury. In addition, enhanced antiangiogenic factor would induce progressive loss of renal microcirculation, and eventually a progressive reduction in renal perfusion and hence, a further loss in renal function. Therefore, the present therapeutic target aims at treating CKD patients at the late stage of CKD does not solve the present public health threat with increment in number of CKD patients entering the end stage of renal disease.

The preceding information raises an intriguing issue as to whether a reversal of renal microvascular disease and enhancement of renal perfusion and function in CKD is plausible. Recent studies tend to support this view. The mechanism of vascular repair appears to be adequately functional in the early stage of CKD. Under the assistance of sensitive diagnostic marker such as fractional excretion of magnesium (FE), which correlates directly with the magnitude of tubulointerstitial fibrosis, FE Mg is able to screen for the early stage of CKD (stage 1, 2) [6]. It is interesting to note that the mechanism of vascular repair in patients with early stage of CKD and normo-albuminuric type-2 diabetes is normal or mildly altered with adequate function [7]. Further clarification to this observation, based on the effectiveness of therapeutic strategy initiated at the early stage of CKD and normo-albuminuric diabetic nephropathy, can be accomplished

with enhanced renal perfusion, and restoration of renal function [8, 9].

Thus, a new conceptual view of therapeutic strategy toward renal restoration and regeneration can be reinforced into practice in accordance with the preceding body of knowledge.

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