Use of Renin-angiotensin-aldosterone System (RAAS) Blockade in Thai Diabetic Kidney Disease Patients: The Gap between Standard and Practice

Soontaree Nakasatien1  Yotsapon Thewjitcharoen1
Siriwan Butadej1  Somboon Vongterapak1
Chattip Thammawiwat1  Ekgaluck Wanothayaroj1
Krittiyawong Sirinate1  Thep Himathongkam1

1Diabetes and Thyroid Center, Theptarin Hospital, Bangkok 10110, Thailand

Background: Current guidelines recommend renin-angiotensin-aldosterone system (RAAS) blockade as an organ-protective agent in diabetic kidney disease (DKD) patients. Previously, our audit data revealed achievement rate of urine albumin screening at 75% in general patients with diabetes, while 80% of patients with albuminuria received RAAS blockade.

Objective: This study aimed to evaluate the rate of RAAS blockade use in patients with type 2 diabetes mellitus (T2DM) who developed DKD and to identify the reasons for not starting RASS blockade according to recommendations.

Methods: From 2015 to 2017, all T2DM patients with moderate to severe DKD (GFR 15-60 mL/min/1.73 m²) who had completed data of diabetic complications screening were registered in our DKD registry. Those who had chronic kidney disease from other secondary causes were excluded. Clinical data and reasons not to start RAAS blockade were collected.

Results: A total of 162 DKD patients (females 50.6%, mean age 71.1±10.0 years, duration of diabetes 19.5±9.4 years, body mass index (BMI) 27.3±4.7 kg/m2, A1C 7.4±1.4%, GFR 46±14mL/min/1.73 m2, insulin usage 39.5%, and diabetic retinopathy 27.2%) were included in the study. Based on urinary albumin excretion rate (UAER), the patients were divided into 3 groups (normoalbuminuric patients 24.7%, microalbuminuric patients 43.8%, and macroalbuminuric patients 31.5%). Overall rate of RAAS blockade use was only 71.0% (ACEI 16.5%, ARB 83.5%). The usage of RAAS blockade decreased as DKD advanced. The three most common reasons for not starting this medication by treating clinicians included worsening renal function (57.4%), failure to recognize DKD status (19.1%), and normotensive normoalbuminuric DKD (12.8%).

Conclusion: Our routine clinical practice among diabetologists showed that RAAS blockade is still underutilized among DKD patients who would benefit most from this medication. Around one-fourth of DKD patients have normoalbuminuria but with progressive renal insufficiency. Efforts to evaluate and improve quality care of DKD patients with moderate to severe impaired GFR should be done to ensure provision of adequate RASS blockade treatment.

Keywords: RAAS blockade treatment, Thai DKD, Standard and real practice, Underutilized, Improve quality care