Assessment of Metformin Prescription Patterns among Type 2 DM Patients with Chronic Kidney Disease at Outpatient of Phramongkutklao Hospital

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**Background:** Metformin is an oral hypoglycemic drug in biguanides groups, which has been used for a long time. Metformin is also not expensive and considered as a first line in treatment of type 2 diabetes mellitus. The UK Prospective Diabetes Study showed that the use of metformin in obese diabetes patients reduces cardiovascular events. Chronic kidney disease represents a contraindication to metformin usage; however, recent recommendations suggested that metformin can be used safely, unless eGFR falls below 30 ml/min, with a dose reduction advised at 45 ml/min.

**Objective:** To assess metformin prescription patterns and the compatible use of metformin according to eGFR among type 2 DM patients with chronic kidney disease.

**Methods:** An observation study from electronic data collected at Phramongkutklao Hospital was conducted in Type 2 diabetes patients with chronic kidney disease who received metformin treatment as outpatients at least 3 months by physicians in Division of Internal Medicine from January to December 2016.

**Results:** A number of 1,276 diabetic and CKD patients who received metformin prescription at outpatient in Phramongkutklao Hospital were included. Approximately 95.6%, 93.9%, and 92.9% of fellows, residents and medical staffs used appropriate dose of metformin according to eGFR. Both CKD stage 3b and 4 were main significant factors of inappropriate use of metformin. However, the outpatients at geriatric and nephrology clinics were also observed with significantly inappropriate use of metformin compared to medicine clinic.

**Conclusion:** Most of physicians appropriately use metformin according to eGFR. However, there is a statistical significance in the variation of inappropriate metformin dose in CKD stage 3b and 4 patients at geriatric and nephrology outpatient clinics.

**Keywords:** Type 2 diabetes, Chronic kidney disease, Metformin, eGFR (estimate glomerular filtration rate)