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Increased risk of mortality and major cardiovascular adverse events, major bleeding outcomes associated with non-steroidal anti-inflammatory drugs (A Nationwide Case-Crossover study)

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Objectives : Many epidemiologic and randomized controlled studies have shown that non-steroidal anti-inflammatory drugs (NSAIDs) had cardiovascular risk and bleeding adverse events. Many dialysis patients complaint various causes of pain, and need of NSAIDs is considerable. However, there was no known study about the effect of NSAIDs on patients with end-stage renal disease (ESRD) receiving dialysis. Nationwide epidemiologic study to evaluate the effect of NSAIDs on dialysis patients should be considered. We investigated the risk of mortality, major cardiovascular adverse events (MACE), major bleeding events associated with NSAIDs

Methods : A retrospective case-cross over designed nationwide epidemiologic study was conducted by analyzing Korean National Health Insurance (NIH) database. Inclusion criteria was patients older than 20 years with maintenance dialysis between January, 2008 and April, 2015. We excluded the patients who could not maintain dialysis at least 90 days from the date of dialysis initiation. For each included dialysis patients, we defined a case period as 1 to 30 days before the index date and control period as 60 to 90 days and 91 days to 120 days before the index date.

Results : A total of 9,417 patients with mortality, 3,313 patients with MACE and 4,923 patients with major bleeding events were included. For mortality, increased risk more obvious in non-selective NSAIDs such as diclofenac and aceclofenac than selective NSAIDs. Non-selective NSAIDs showed increased risk of MACE, and selective NSAIDs did not increased MACE. In regarding to major bleeding events, both selective (OR: 1.684, CI: 1.310-2.165) and non-selective NSAIDs (OR: 1.945, CI: 1.813-2.087) showed increased risk in dialysis patients.

Conclusions : Use of NSAIDs increased mortality, MACE and major bleeding events in dialysis patients. Increased risk of non-selective NSAIDs was more evident in MACE than selective NSAIDs and both non-selective and selective NSAIDs increased risk of major bleeding events.

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Keywords :