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Multicentre observational retrospective cohort studies among patients with type 2 diabetes using a common data model of OHDSI

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A common data model (CDM) is a data scheme that allows the systematic analysis of disparate observational databases.

Each hospital has various types of EMR programs and electronically-generated medical information data. In case of multicenter observational research, collecting each piece of clinical data should perform through a data cleansing process cost researchers' effort. Also, a problem of privacy data protection through data merging process will be arise.

If the clinical data belonging to each center could retrieve through the same scheme, the effort of manually collecting data from each hospital will be saved. These merging process of clinical data performed in meta-level of database, the privacy problem can be solved easily. The series of processes could call a common data model platform. Once a database has been converted to the CDM, evidence can be generated using standardized analytics tools as ATLAS, which provided by OHDSI.

OHDSI is the name of multidisciplinary research collaborative. As 2018, OHDSI collaborative covers 17 countries, 82 database sources, and domain data of 1.2 billion people. However, most of the 1.2 billion is US data, which has a drawback of a lot of duplicate data. The Observational Health Data Sciences and Informatics (OHDSI) initiative is an international collaborative to investigate real-world evidences from health data worldwide.

This researcher conducted a real-world evidence study on the effects of metformin on diabetic nephropathy using OHDSI's ATLAS program in the three tertiary medical institutions: Seoul national university Bundang hospital, Seoul national university hospital, Asan medical center. We would like to share the research results.