OHDSI China Chapter Updates – 2020.11

by Hua Xu

- Recent activities
  - OHDSI Book in Chinese
  - OHDSI Chinese vocabulary version 2.0, mapped to English concepts
  - Legend Study in Asian-Pacific
  - 2020 OHDSI Asian-Pacific Symposium (12/5-6)
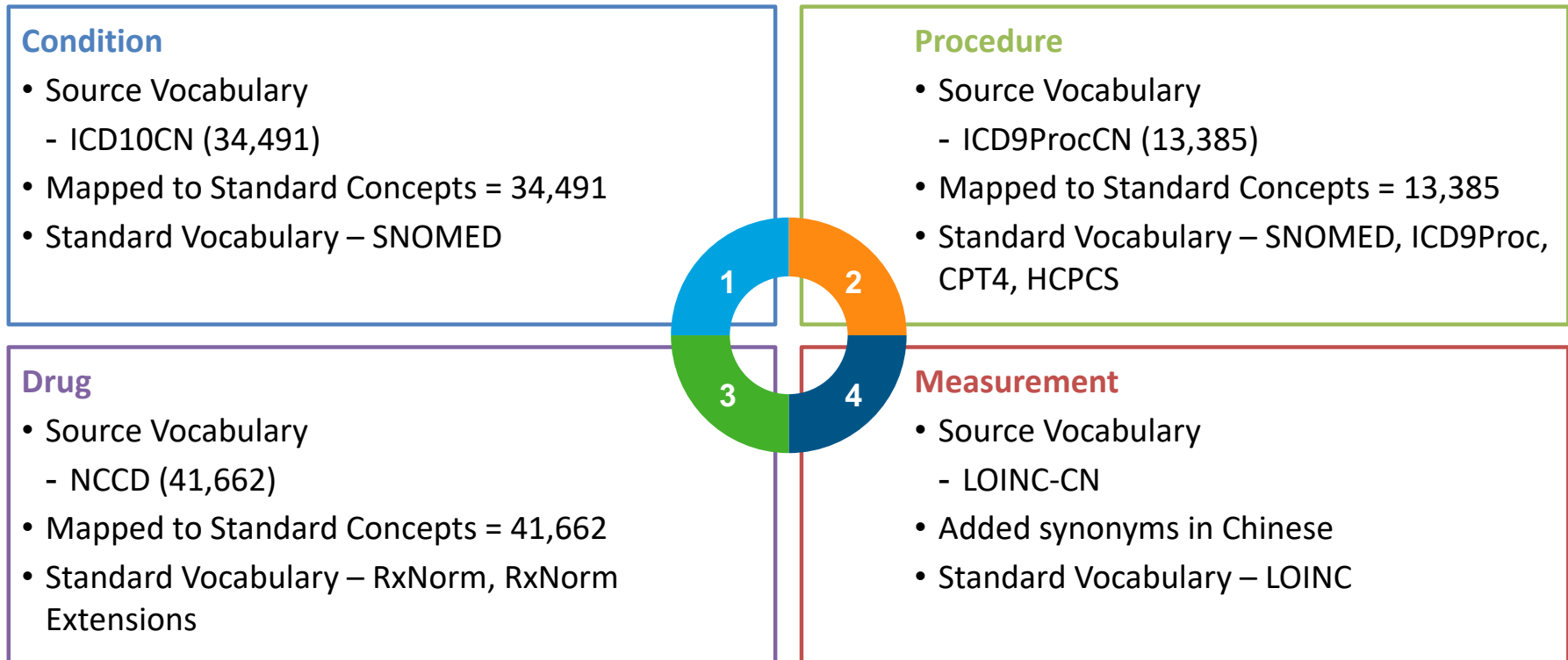
OHDSI Book in Chinese

- Volunteers from OHDSI China community (effort led by Dr. Mengchun Gong)
- PDF version is ready, will be distribute at OHDSI website
- Hard copy is in process

Chinese Vocabularies Mapped to OMOP Standards
Condition, Procedure, Drug, Measurement

Condition
- Source Vocabulary
  - ICD10CN (34,491)
- Mapped to Standard Concepts = 34,491
- Standard Vocabulary – SNOMED

Procedure
- Source Vocabulary
  - ICD9ProcCN (13,385)
- Mapped to Standard Concepts = 13,385
- Standard Vocabulary – SNOMED, ICD9Proc, CPT4, HCPCS

Drug
- Source Vocabulary
  - NCCD (41,662)
- Mapped to Standard Concepts = 41,662
- Standard Vocabulary – RxNorm, RxNorm Extensions

Measurement
- Source Vocabulary
  - LOINC-CN
- Added synonyms in Chinese
- Standard Vocabulary – LOINC

1 2 3 4

- Thanks to the IQVIA team and other volunteers from OHDSI China Vocabulary sub-group

APAC Legend Study

A Comprehensive Comparative Effectiveness and Safety Study of the Second Antihypertensive Agent at scale using the OHDSI AP Network

Yuan Lu[1,2], Jing Li[1,3], Sang Youl Rhee[1,4], Hua Xu[1,5], Nicole Pratt[1,6], Seng Chan You[1,7], Mui Van Zandt[1,3], Mengling Feng[1,8], Lei Liu[1,9], Ian Chi Kei Wong[1,10], Rae Woong Park[1,7], Jiyoung Hwang[1,7], Tatsuo Hiramatsu[1,11], Usman Iqbal[1,12], Yu-Chuan Li[1,13], Min-Huei Hsu[1,13], Jitendra Jonnagaddala[14], Christian Reich[1,3]

[1] Observational Health Data Sciences and Informatics, New York, USA; [2] Center for Outcomes Research & Evaluation (CORE), Yale University, New Haven, CT, USA; [3] Real World Solutions, IQVIA, Durham, NC, USA; [4] Kyung Hee University Medical Center, Seoul, Korea; [5] School of Biomedical Informatics, The University of Texas Health Science Center at Houston, Houston, TX, USA; [6] Quality Use of Medicines and Pharmacy Research Centre, University of South Australia, Adelaide, South Australia, Australia; [7] Department of Biomedical Informatics, Ajou University School of Medicine, Suwon, Korea; [8] Saw Swee Hock School of Public Health, National University Health System, National University of Singapore, Singapore; [9] Shanghai Medical College of Fudan University, Shanghai, China; [10] Centre for Safe Medication Practice and Research, Department of Pharmacology and Pharmacy, The University of Hong Kong, Hong Kong Special Administrative Region, China; [11] Innovation & Research Support Center, International University of Health and Welfare (IUHW), Tokyo, Japan; [12] College of Public Health, Taipei Medical University, Taipei City, Taiwan; [13] Research Center for Artificial Intelligence in Medicine, Taipei Medical University, Taipei City, Taiwan; [14] University of New South Wales, Australia.
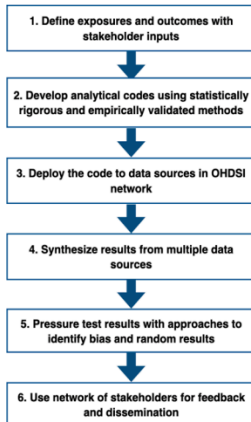
Background

Hypertension is a leading cause of death and disability across the world[1]. Although many antihypertensive agents are available to treat hypertension, there remains considerable uncertainty regarding the optimal choice of a second agent to added monotherapy for hypertension, which is necessary for a substantial proportion of patients. Clinical trials have not provided head-to-head comparisons of the effectiveness and safety associated with the second line antihypertensive agents after monotherapy to control blood pressure[3,4]. The lack of high-quality evidence addressing this question means that guidelines are unable to provide recommendations about the preferred choice of medication for treatment escalation[5,6]. A better understanding of the comparative effectiveness and safety of different classes of second antihypertensive agents added to monotherapy, with attention to relevant subgroups of patients defined by demographic, geographic and clinical factors, has a great potential to inform clinical decisions.

Methods

This study is an extension of the Large-Scale Evidence Generation and Evaluation across a Network of Databases for Hypertension (LEGEND-HTN) initiative. We pursued three aims: (1) to describe real-world treatment variation in common antihypertensive agents added to monotherapy among patients with hypertension by demographic, clinical, and geographic subgroups; (2) to determine real-world effectiveness of common antihypertensive agents added to monotherapy for three primary (acute myocardial infarction, heart failure, and stroke) and six secondary effectiveness outcomes; and (3) to determine real-world risks of adverse events and benefits on 46 safety outcomes.

We developed and implemented a systematic, large-scale observational study that provided comprehensive pairwise comparisons between dual combinations of any of the four major antihypertensive agent classes to answer questions in Aims 1-3. In contrast to a single comparison approach, this study provided a comprehensive view of the findings and their consistency across populations, drugs, and outcomes. We modelled the study on the LEGEND-HTN collaborative research evaluating the comparative effectiveness of first-line antihypertensive monotherapies recently published in The Lancet[2]. The study followed a workflow described in Figure 1.

Figure 1. Overview of work process

1. Define exposures and outcomes with stakeholder inputs
2. Develop analytical codes using statistically rigorous and empirically validated methods
3. Deploy the code to data sources in OHDSI network
4. Synthesize results from multiple data sources
5. Pressure test results with approaches to identify bias and random results
6. Use network of stakeholders for feedback and dissemination

Results

We have designed 12 cohorts based on the different combinations of the four main antihypertensive agents as the first-step feasibility study. Below are the results from the committed APAC data sources.

Cohort #	1st Drug	2nd Drug	Australia IQVIA Australia*	Australia ePBRN SWSLHD*	Korea Ajou Univ*	Korea KHMC*	Singapore SG_KTPH*	Singapore SG_NUH*	China iHeart - Jinan*	China Jiangsu*	Taiwan TMUCRD*	Japan JMDC
1	ACEi/ARB	CCB	4,425	698	1,216	147	257	439				
2	CCB	ACEi/ARB	1,418	246	1,487	191	217	133				
3	ACEi/ARB	Diuretic	2,204	508	474	12	19	31				
4	Diuretic	ACEi/ARB	268	94	154	2	8	7				
5	ACEi/ARB	B-blocker	1,249	268	392	49	177	144				
6	B-blocker	ACEi/ARB	765	210	386	98	154	128				
7	CCB	Diuretic	72	28	259	15	14	6				
8	Diuretic	CCB	53	25	139	6	5	7				
9	CCB	B-blocker	199	41	814	217	156	101				
10	B-blocker	CCB	163	54	614	199	130	243				
11	Diuretic	B-blocker	28	14	43	5	3	8				
12	B-blocker	Diuretic	27	17	51	10	6	7				

*committed data sources

ACEi: angiotensin-converting enzyme inhibitor; ARB: angiotensin receptor blocker; CCB: calcium channel blocker; B-blocker: beta-blocker.

Conclusions

This is the first collaborative effort of the newly established OHDSI Asia Pacific group. Although the project is still undergoing, the initial analyses support the feasibility of the study and show significant variations in treatment utilization across countries. Following the LEGEND principles of open, reproducible and reliable science, this work will bridge important knowledge gaps in treatment escalation for hypertension. The contribution will be significant as it provides critical information to inform treatment decisions facing patients with hypertension, their caregivers, clinicians, policymakers and healthcare system leaders in Asia Pacific region.

Reference:
1. Kearney PM, Whelton M, Reynolds K, Muntner P, Whelton PK and He J. Global burden of hypertension: analysis of worldwide data. Lancet. 2005;365:217-23.
2. Suchard MA, Schuemie MJ, Krumholz HM, You SC, Chen R, Pratt N, Reich C, Duke J, Madigan D, Hripcsak G and Ryan PB. Comprehensive comparative effectiveness and safety of first-line antihypertensive drug classes: a systematic, multinational, large-scale analysis. Lancet. 2019;394:1816-1826.
3. Schuemie MJ, Hripcsak G, Ryan PB, Madigan D and Suchard MA. Robust empirical calibration of p-values using observational data. Statistics in medicine. 2016;35:3883.
4. Schuemie MJ, Hripcsak G, Ryan PB, Madigan D and Suchard MA. Empirical confidence interval calibration for population-level effect estimation studies in observational healthcare data. Proc Natl Acad Sci U S A. 2018;115:2571-2577.
5. Schuemie MJ, Cepeda MS, Suchard MA, Yang J, Tian Y, Schuler A, Ryan PB, Madigan D and Hripcsak G. How Confident Are We About Observational Findings in Health Care: A Benchmark Study. Harvard Data Science Review. 2020;2.
6. Whelton PK, Carey RM, Aronow WS, Casey DE, Jr., Collins KJ, Dennison Himmelfarb C, DePalma SM, Gidding S, Jamerson KA, Jones DW, MacLaughlin EJ, Muntner P, Ovbiagele B, Smith SC, Jr., Spencer CC, Stafford RS, Taler SJ, Thomas RJ, Williams KA, Sr., Williamson JD and Wright JT, Jr. 2017 ACC/AHA/AAPA/ABC/ACPM/AGS/APhA/ASH/ASPC/NMA/PCNA Guideline for the Prevention, Detection, Evaluation, and Management of High Blood Pressure in Adults: Executive Summary: A Report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines. Circulation. 2018;138:e426-e483.

- Thanks to Dr. Yuan Lu and the IQVIA team

2020 OHDSI APAC Symposium (12/5-6)

2020 APAC OHDSI Symposium

📅 Posted on December 5, 2020 │ by 👤 Craig Sachson │ Posted in

Date/Time
Date(s) - 12/05/2020 - 12/06/2020
10:00 am - 2:00 pm

Map Unavailable

Categories No Categories

SESSION 1: Dec. 5, 10:00 AM – 13:30 PM KST
SESSION 2: Dec. 6, 10:00 AM – 14:00 PM KST

We are excited to announce that registration for the 2020 OHDSI APAC Symposium is now open! This virtual event, which will take place over two half-days December 5-6 (APAC time zone, which is Dec. 4-5 afternoon/evening in U.S. time), will highlight three ways our APAC community collaborates together: Learning, Sharing and Doing! The first session will take place from 10:00 AM – 13:30 PM KST on Dec. 5, while the second will be 10:00 AM – 14:00 PM KST on Dec. 6.

Our 1st OHDSI APAC Symposium will feature everything that makes our event an annual highlight for so many community members, including plenary sessions, regional chapter breakout and the Collaborator Showcase, where we will bring our APAC community together to collaboratively generate real-world evidence on an important healthcare issue.

The OHDSI APAC Symposium is for both community veterans and newcomers who are interested in learning more about our network. Please continue to check the OHDSI website and the OHDSI social platforms periodically for updates as we plan for a rewarding, online event!

- https://www.ohdsi.org/events/2020-apac-ohdsi-symposium/

- Thanks to Mui Van Zandt and Lingyi Tang

- Register now!