SISPE Recommended Articles for Pharmacoepidemiology Beginners

Topic	Sub-topic	Title of the article (with PubMed link)
Basic Method	Validity & Reliability	Visualizations throughout pharmacoepidemiology study planning, implementation, and reporting
	Risk or associated estimate	Assessing the benefit: risk ratio of a drug--randomized and naturalistic evidence
Bias	Confounding	Addressing unmeasured confounding in comparative observational research
	Confounding	Core concepts in pharmacoepidemiology: Confounding by indication and the role of active comparators
	Confounding	Confounding by indication in epidemiologic studies of commonly used analgesics
	Selection bias	Selection bias and information bias in clinical research
	Selection bias	How to investigate and adjust for selection bias in cohort studies
	Selection bias	Survivor treatment selection bias in observational studies: examples from the AIDS literature
	Information bias	Selection bias and information bias in clinical research
	Information bias	Information bias in health research: definition, pitfalls, and adjustment methods
	Time-related bias	Time-related biases in pharmacoepidemiology
	Time-related bias	Statins and lower mortality in rheumatic diseases: An effect of immortal time bias?
	Time-related bias	Does Metformin Reduce Cancer Risks? Methodologic Considerations
	Time-dependent confounding	Controlling Time-Dependent Confounding by Health Status and Frailty: Restriction Versus Statistical Adjustment
	Time-dependent confounding	Analysis of Longitudinal Studies With Repeated Outcome Measures: Adjusting for Time-Dependent Confounding Using Conventional Methods
	Time-dependent confounding	A sequential Cox approach for estimating the causal effect of treatment in the presence of time-dependent confounding applied to data from the Swiss HIV Cohort Study
	Informative censoring	Informative censoring in relative survival
	Missing data	An overview of practical approaches for handling missing data in clinical trials
	Bias analysis	Bias Analysis for Uncontrolled Confounding in the Health Sciences
	Bias analysis	A systematic review of quantitative bias analysis applied to epidemiological research
Study Design	Cohort & Case-control	Core concepts in pharmacoepidemiology: Fundamentals of the cohort and case-control study designs
	Cohort	Propensity score methods to control for confounding in observational cohort studies: a statistical primer and application to endoscopy

		research
	Case-control	Case-Control Studies in Pharmacoeconomic Research
	Self-controlled case series	Self controlled case series methods: an alternative to standard epidemiological study designs
	Self-controlled case series	Use of the self-controlled case-series method in vaccine safety studies: review and recommendations for best practice
	Self-controlled case series	Use of self-controlled designs in pharmacoepidemiology
	Self-controlled case series	Control yourself: ISPE-endorsed guidance in the application of self-controlled study designs in pharmacoepidemiology
	Self-controlled case series	Methods to control for unmeasured confounding in pharmacoepidemiology: an overview
	Case-crossover	Should we use a case-crossover design?
	Case-crossover	Blood Pressure and the Risk of Acute Kidney Injury in the ICU: Case-Control Versus Case-Crossover Designs
	Case-crossover	Interpretation and bias in case-crossover studies
	Randomized-control trial	Can insights from placebo and nocebo mechanisms studies improve the randomized controlled trial?
	Target-trial emulation	The importance of the design of observational studies in comparative effectiveness research: Lessons from the GARFIELD-AF and ORBIT-AF registries
Statistical Analysis	Confounding adjustment	Confounding in observational studies based on large health care databases: problems and potential solutions – a primer for the clinician
	Confounding adjustment	Confounding in Observational Studies Evaluating the Safety and Effectiveness of Medical Treatments
	Survival analysis	Survival Analysis and Interpretation of Time-to-Event Data: The Tortoise and the Hare
	Propensity Score	To use or not to use propensity score matching?
	Propensity Score	Reporting of covariate selection and balance assessment in propensity score analysis is suboptimal: a systematic review
	Propensity Score	Indications for propensity scores and review of their use in pharmacoepidemiology
	Propensity Score	Using propensity scores to estimate effects of treatment initiation decisions: State of the science
	Disease risk score	Disease risk score as a confounder summary method: systematic review and recommendations
	Disease risk score	Use of disease risk scores in pharmacoepidemiologic studies
	Disease risk score	Role of disease risk scores in comparative effectiveness research with emerging therapies
	Time-dependent analysis	Performance of time-dependent propensity scores: a pharmacoepidemiology case study

	Instrumental variable	Instrumental variable methods in comparative safety and effectiveness research
	Instrumental variable	A tutorial on the use of instrumental variables in pharmacoepidemiology
	Instrumental variable	Connecting Instrumental Variable methods for causal inference to the Estimand Framework
	Machine Learning	Machine Learning and Artificial Intelligence in Pharmaceutical Research and Development: a Review
	Machine Learning	Machine Learning in Causal Inference: Application in Pharmacovigilance
	Machine Learning	Lessons and tips for designing a machine learning study using EHR data
	Machine Learning	Applying Machine Learning in Distributed Data Networks for Pharmacoepidemiologic and Pharmacovigilance Studies: Opportunities, Challenges, and Considerations
	Machine learning	From Real-World Patient Data to Individualized Treatment Effects Using Machine Learning: Current and Future Methods to Address Underlying Challenges
Other	Reporting	STaRT-RWE: structured template for planning and reporting on the implementation of real world evidence studies
	Reporting	The reporting of studies conducted using observational routinely collected health data statement for pharmacoepidemiology (RECORD-PE)
	Reporting	Reporting to Improve Reproducibility and Facilitate Validity Assessment for Healthcare Database Studies V1.0
	Data visualization	Visualizations throughout pharmacoepidemiology study planning, implementation, and reporting
	Data visualization	Literature review of visual representation of the results of benefit-risk assessments of medicinal products
	Data visualization	Graphical Depiction of Longitudinal Study Designs in Health Care Databases
	Pharmacovigilance (signal detection)	Methods for safety signal detection in healthcare databases: a literature review
	Pharmacovigilance (signal detection)	Methods for drug safety signal detection using routinely collected observational electronic health care data: A systematic review

List created in June, 2023.

Acknowledgement: The compilation of this article list was made possible by the dedicated efforts of all core members of the ISPE Student Council for the year 2022-2023 — Miyuki Hsieh, Claire Huang, Liz Mansi, Daniel Tsai, Muhammed Rashid and Sebastian Jugl.