



# Asian Pharmacoepidemiology Network

Asian Pharmacoepidemiology Network (AsPEN) is a Special Interest Group (SIG) of the International Society for Pharmacoepidemiology (ISPE)

---

## **Comparative Safety of Nonsteroidal Anti-inflammatory Drugs Commonly Used in Asia**

### **Background:**

Some nonsteroidal anti-inflammatory drugs (NSAIDs) are only or more commonly used in Asian countries (i.e., loxoprofen, mefenamic acid) and their safety has not been well-studied.

### **Objectives:**

To compare the risk of major safety events among initiators of 4 NSAIDs which are commonly used in Asian countries: celecoxib, diclofenac, loxoprofen, and mefenamic acid

### **Methods:**

Operating under a modified distributed network, we conducted a retrospective cohort study using multiple administrative databases in Japan, Korea, and Taiwan. We identified new users of the 4 NSAIDs among those with chronic conditions (diabetes, hypertension, myocardial infarction, stroke, acute coronary syndrome, rheumatoid arthritis) to minimize the exposure misclassification due to over-the-counter NSAID use. We used stratified Cox model (stratified by country) adjusting for high-dimensional propensity score to compare two safety outcomes among NSAID users: hospitalization for cardiovascular (CV) events (i.e., coronary events, heart failure, stroke) and hospitalization for gastrointestinal tract (GI) events (i.e., peptic ulcer, upper/lower GI bleeding) using diclofenac users as the reference.

### **Preliminary Results:**

We identified 212,197 diclofenac users, 32,987 celecoxib users, 82,829 loxoprofen users, and 35,084 mefenamic acid users. Mean age was similar among users (71 for diclofenac and loxoprofen, 72 for celecoxib and mefenamic acid). Many users were female (range: 71% in celecoxib to 59% in loxoprofen) and had co-existing hypertension (>80%). Among diclofenac users,

the crude risk of CV hospitalization varied across countries (range: 13 per 1000 pt-yr in Japan to 37 per 1000 pt-yr in Taiwan), while the risks of GI hospitalizations did not differ. Compared to diclofenac users, the risk of CV hospitalization did not differ from celecoxib users but was lower among loxoprofen users and mefenamic acid users. Similar trend was observed for the risk of GI hospitalization.

**Contact:**

Dr Soko Setoguchi ([soko.setoguchi@duke.edu](mailto:soko.setoguchi@duke.edu)), and  
Edward Chia-Cheng Lai ([chia-cheng.lai@duke.edu](mailto:chia-cheng.lai@duke.edu)), Duke Clinical Research  
Institute.