specific to SJS/TEN and for related non-specific codes for erythema multiforme, drug dermatitis, and drug allergies. All records from 1/1/00-8/1/09 that were identified as potential cases were reviewed manually for confirmation and abstraction of suspected implicated drugs. In addition, we reviewed medical records of patients with two additional SSR: angioedema on ACE inhibitors, and drug hypersensitivity syndrome (DHSS). **Results:** Of 29 patients with codes specific for SJS/TEN, 23 (79%) were confirmed on chart review. Of 140 patients with non-specific SJS/TEN codes, 13 (9%) were confirmed. The most commonly implicated medications included amoxicillin, dilantin, trimethoprim and sulfamethoxazole, and isoniazid. Of 56 subjects with angioedema while on ACE inhibitors, 20 (36%) were confirmed. Of patients with DHSS, 1 of 29 (3%) that had inpatient codes plus abnormal lab values were confirmed on record review, while only 1 of 51 (2%) with inpatient DHSS codes and normal lab values were confirmed. **Conclusions:** We found that large linked electronic HMORN datasets efficiently identified highly probable cases of SJS/TEN. Searches for angioedema following ACE inhibitor exposure were also relatively successful. However, searches for DHSS were unsuccessful and only yielded 2 potential cases. These findings will be useful for planning the next study phase where patients will be recruited for genomic studies from a larger number of HMO sites.
Keywords: Serious skin rashes, Electronic datasets
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C-C5-01:
Drug Safety Data Mining with a Tree-Based Scan Statistic

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Background/Aims: Active post-marketing drug safety surveillance has traditionally focused on predefined drug-adverse event (AE) pairs. However, evaluating predefined pairs does not illuminate unsuspected potential AEs. Drug safety data mining is a surveillance approach that formally evaluates the relationship between medications and a very large number of AEs. We used varying specifications of the tree-based scan statistic data mining method (TreeScan) to search for adverse events among clozapine drug users. **Methods:** Electronic health records from three HMO Research Network health plans were assessed. We used TreeScan to evaluate a hierarchical clinical classification to identify signals of excess risk during prevalent drug exposure as compared to unexposed time. The test statistic – a Poisson based log likelihood ratio – is adjusted for multiple testing inherent in the many potential AEs evaluated. Four alternate specifications were incorporated: ramp-up periods of 180 and 400 days and outcome definitions using inpatient plus outpatient diagnoses and inpatient diagnoses only. For each drug and specification, we calculated expected and observed counts for each level of the hierarchical tree, adjusting for age, sex, and health plan. **Results:** We identified 242,000 to 580,000 exposed clozapine days and 150 to 345 exposed outcomes across the different specifications. Both ramp-up periods found 17 unique statistical signals using inpatient plus outpatient diagnoses. Of those, several represent confounding by indication (three signals in mental health, two for injury and poisoning) and others are known AEs (e.g., convulsions, hypotension, GI system). Limiting outcomes to the inpatient setting reduced the number of signals to 14 (180-day ramp-up) and 10 (400-day ramp-up). Overall, the inpatient-only AE signals were in the same clinical systems, with some exceptions. The inpatient specification signaled for circulatory events and diseases of the heart, but hypotension was no longer found. Genitourinary AEs signaled using inpatient plus outpatient diagnoses but were not identified using inpatient diagnoses only. **Conclusions:** Data mining using electronic health records is an important complement to other post-marketing drug safety research. Once specifications are finalized, TreeScan will be applied to assess the safety of over 100 oral outpatient medications.
Keywords: Data mining, TreeScan, Clozapine
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PS1-31:
Assessing the Potential for Research on Genetics of Drug Induced Liver Injury in the HMORN

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Background/Aims: Drug Induced Liver Injury (DILI) is a major cause of liver failure in the US and the leading reason for failure of investigational drugs in clinical trials, lack of drug approval, and post-market withdrawal of approved drugs. Recent genome-wide association studies have identified variations within the major histocompatibility complex in Caucasians to be linked with flucloxacillin and lumiracoxib-related liver injury. The need for replication of these findings and extension of these investigations to other drug exposures and other ethnic groups will require substantial case numbers with supporting medical record documentation. With support from The Serious Adverse Event Consortium, an international consortium led by the pharmaceutical industry in conjunction with the FDA, we conducted a feasibility study to evaluate the potential for using electronic clinical and administrative data from two HMORN sites to identify provisional DILI cases. **Methods:** Building upon previous research, we developed data specifications for electronic searches of ICD-9 codes with time proximate laboratory results indicative of liver-related disease. Electronic criteria were used to 'rule out' other liver diseases and other co-morbid conditions indicative of systematic liver-related effects. For feasibility testing, two methods of population identification were incorporated: the VDW and EMR reporting. All records from 1/1/00-8/1/09 that were identified as 'potential DILI cases' were reviewed manually, and selected data were abstracted, including suspected implicated drug(s). **Results:** Records for 1,123,173 individuals were screened for potential case status; 29,893 records with one or more diagnoses of interest were identified. After application of the "rule out' exclusion criteria, 584 potential DILI cases were reviewed and 99 ultimately met provisional case status. Drugs commonly associated with provisional DILI cases were sulfa-containing antibiotics, anticonvulsants, isoniazid, and statins. Roughly one-half of provisional DILI cases were associated with a single implicated drug. **Conclusions:** Electronic infrastructures currently available within many highly integrated health care delivery systems can be efficiently leveraged to support identification of provisional DILI events. Systems that have comprehensive episodic, historic and post-event data, including lab, diagnostic, treatment, imaging, and medication records that can be accessed electronically should be considered primary systems for expanding DILI case accumulation efforts.
Keywords: Drug-induced liver injury, Research, Feasibility studies
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PS1-18:
A Feasibility Pilot to Determine the Practicality of Using the HMO Research Network to Research the Genetics of Drug-Induced Serious Adverse Events

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Background/Aims: The International Serious Adverse Events Consortium (iSAEC) is a pharmaceutical industry and FDA-led consortium focused on identifying DNA variants useful for predicting risk of drug-induced rare serious adverse events (SAEs). We assessed the feasibility of using electronic medical databases at six HMORN sites to identify provisional cases of three SAEs: drug-induced liver injury (DILI), serious skin rashes (SSR), including