

Establishment and Optimization of A Module for Automatic Monitoring Drug Induced Movement Disorders Based on HIS

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Abstract

Objective: To establish a module for automatic monitoring drug induced movement disorders in hospitalized population based on the hospital information system (HIS) and the adverse drug event active surveillance and assessment system- -II (ADE-ASAS-II), and provide an efficient data mining tool for real world research. *Methods:* To collect information from Literature review, case reports, spontaneous reports and medical records, and a comprehensive automatic monitoring module including inclusion criteria and exclusion criteria was constructed based on ADE-ASAS-II system and text classification technology. Select hospitalized patients for a certain period of time, repeat machine learning and condition debugging, and determine the best module Settings. Then replace the monitoring period to verify the module operation efficiency. Finally, the cases of DIMDs were obtained by manual evaluation of causal association. *Results:* 4918 hospitalized patients from October 10 to 16, 2022 were selected, and the optimal setting conditions were determined after repeated module test, including inclusion criteria (42 diagnostic keywords for symptoms and signs, 3 diagnostic keywords) and exclusion criteria (11 ignored texts and 20 ignored document titles). After optimization, the positive predictive value (PPV) of the module was 19.27%, the recall rate (R) was 94.52%. *Conclusion:* Based on machine learning and manual collaboration, the active monitoring module can effectively help clinical pharmacovigilance, quickly locate target cases, strengthen active communication and collaboration with clinicians, and provide ideas and support for early diagnosis and treatment of DIMDs and scientific research.

Keywords

Drug Induced Movement Disorders, Automatic Monitoring, Text Classification Technology, Data Mining, Real World Study