DILI-Assist: A Web-Based Decision Support Platform for Drug-Induced Liver Injury Assessment

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According to the World Health Organization (WHO), adverse drug reactions (ADRs) are harmful and unintended responses to drugs at normal doses, representing a major cause of morbidity, mortality, and healthcare costs worldwide. Reports of ADRs have steadily increased across Asia, Europe, and the United States. ADRs are particularly critical in evaluating **drug-induced liver injury (DILI)**, which frequently occurs during treatment with immune checkpoint inhibitors (ICIs). The current gold standard for detecting medication errors and adverse events is manual chart review, but this process is time-consuming, labor-intensive, and subject to variability. Moreover, because hospital data are often stored in tabular formats that are not intuitive, clinicians face difficulties in systematically assessing drug-related causality in real-world practice.

We developed **DILI-Assist**, a web-based platform to support hepatotoxicity assessment in clinical settings. Core features include: **chart-based visualization** of medication timelines and laboratory results, enabling exploration of drug accumulation and temporal associations; **causality assessment** using the Naranjo Algorithm, standardized within the workflow; **integrated PubMed search** for real-time literature access; and **local, in-browser processing** to enhance both data security and performance.

When applied to hospital datasets, DILI-Assist enabled rapid visualization, standardized causality scoring, and immediate evidence support, reducing reliance on manual chart review. This platform transforms complex clinical data into a secure and practical tool for hepatotoxicity assessment and evidence-based decision-making.