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Biosketch

Dr. Suzuki has received her MD at Kanazawa University, School of Medicine, Japan, with subsequent board certifications in Internal Medicine, Gastroenterology and Gastrointestinal Endoscopy in Japan. She received her PhD in basic research (RE: pancreatic insufficiency) at Kanazawa University and subsequent MSc studying biostatistics and epidemiology at Mayo Graduate School, Rochester, MN. She is currently serving as Director of Hepatology, Central Arkansas Veterans Healthcare System, Associate Professor, Gastroenterology and Hepatology, University of Arkansas for Medical Sciences, Little Rock, AR and adjunct Associate Professor, Gastroenterology and Hepatology, Duke University, Durham, NC. She is also a visiting faculty at National Center for Toxicological Research, Jefferson, AR, and has been actively involved in broad research activities from animal experiments to translational research, clinical trials, epidemiological research, and data-mining analysis in the field of hepatotoxicity and NAFLD.

Abstract: Interactions Between Drug Properties and Host Factors - Adaptive Mechanisms

Drug-induced liver injury (DILI) is a multi-factorial disorder associated with diverse clinical phenotypes. DILI risk and initial injury phenotype are likely determined by a multifaceted interplay of drug-specific properties and host-specific attributes. Once injury is established, various host factors (e.g., genetic variants, gender, co-medications) may modulate injury/inflammation and determine outcomes.(1)

New discoveries in pharmacogenomics (2, 3), animal experiments (4, 5), and data-mining analysis (6) consistently suggest that host immune & inflammatory responses to drug-induced injury stimuli play significant roles in DILI and may largely determine individual susceptibility and a likelihood of developing serious DILI. Certain drugs are also known to induce drug-specific T-cell responses.(7) Thus, it is plausible to conceptualize that individuals' DILI risk to specific drugs and immunological phenotypes observed in DILI cases are likely determined by their interplay.

Imbalance of tissue damage and repair may also contribute to DILI outcome. Previous data-mining analyses demonstrated that co-reporting with drugs which diminish liver injury or enhance liver regeneration in animal experiments was associated with a reduced likelihood of fatality among acetaminophen-associated liver events reported in FAERS.(8) Contrarily, sympathetic stimulants, which are known to enhance liver injury and inhibit liver regeneration, were associated with an increased likelihood of fatality.(8) The inhibition of histone acetylation/de-acetylation (9, 10) and chemotherapy (11, 12) appear to compromises liver regeneration, posing theoretical concerns over detrimental impact on DILI outcome in relevant clinical conditions.

Current knowledge and future investigational approaches in the drug-host interplay pertaining to adaptive mechanisms will be discussed at the meeting.