Genetic risk factors for DILI-recent findings from large international networks

Ann K. Daly

Institute of Cellular Medicine, Newcastle University, Newcastle upon Tyne, UK

Applying genome-wide association studies to DILI in the past 10 years has resulted in considerable progress in understanding genetic risk factors for this toxicity. Initially, a small number of HLA associations with strong effect sizes which related to common drug causes of this reaction were detected in relatively small cohorts. However, DILI is triggered by a wide range of different drugs. The rarity of some drug-specific forms and the apparent drug-specific nature of most reported genetic associations to date makes international collaboration vital. Data from a recent study identifying non-HLA risk factors which appear not drug-specific and were detected by collaboration between iDILIC, a predominantly European network which developed from several older local networks, and the DILIN network based in the United States of America will be described. Interplay between HLA and non-HLA risk factors will be considered together with prospects for identification of individuals at highest risk of DILI development prior to drug exposure.