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Prevalence of drug resistant epilepsy (DRE) and the value of therapeutic drug monitoring (TDM) and utilization of dried blood spots for TDM in epilepsy

The objective of study is to determine the proportion of population of adult people with epilepsy (PWE) in Singapore to have drug resistant epilepsy (DRE). 557 adult PWE who have attended the neurology specialist clinic of a tertiary referral hospital in Singapore were profiled for drug responses according to the definition for DRE as specified by the International League against Epilepsy (ILAE) 2010 consensus. This is a retrospective cohort study. Data collected included demographics, characteristics of seizure and epilepsy, blood biochemistry levels, electroencephalogram and brain imaging findings, and medication histories. The types and dosages of antiepileptic drugs (AEDs) used were retrieved from case notes and checked against pharmacy records. Each patient was counselled upon the diagnosis of epilepsy and taught to maintain a seizure diary. The dates and number of seizures were retrieved from these diaries at each visit. Treatment-related adverse effects were routinely assessed and hence, patients were assumed not to have treatment-related adverse effects when no relevant documentation was encountered. The prevalence rate of DRE in this clinic was 21.5%. From multivariate analysis, patients with structural-metabolic etiology, mental retardation, psychiatric illnesses and pre-treatment seizure frequency of more than once monthly were found to be more likely to have DRE ($p \leq 0.05$). Although the influence of Indian ethnicity on the risk of DRE was only found in the univariate analysis, it warrants investigation in a larger cohort.

Biography

Paul C Ho has completed his PhD from the University of Queensland on the topic of Clinical pharmacokinetics in the elderly. Subsequently, he continued his Post-doctoral studies at the Upjohn Center of Clinical Pharmacology, University of Michigan, where he studied the pharmacokinetics of controlled release dosage forms. Currently, he is the Professor and Deputy Head of the Department of Pharmacy, National University of Singapore. His current research areas include the pharmacokinetics and biopharmaceutics of drugs for neoplastic and neurodegenerative diseases. He has published over 140 scientific research articles, and 4 chapters in books in his field of study. He is currently serving as Editorial Board Member and reviewer for a number of journals.

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