

## ACUTE PRESCRIBING IN GENERAL PRACTICE TO CHILDREN ON LONGTERM ANTIEPILEPTIC THERAPY. THE POTENTIAL FOR ACUTE DRUG-DRUG INTERACTIONS. A RETROSPECTIVE OBSERVATIONAL STUDY

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Epilepsy is a common disorder affecting 0.5-2% of the population. Drug treatment is also common, however many of the agents used have a narrow therapeutic window, and a pharmacokinetic profile which lends itself to potentially harmful drug-drug interactions. A recent survey of drug-related deaths within the UK reported that anticonvulsants were the most important drug group involved in childhood death. The aims of this study were to assess the number of acute prescriptions issued in general practice to children on chronic antiepileptic therapy which might give rise to a potential drug-drug interaction, and to determine which age group is most at risk.

Chronic antiepileptic drug (AED) and acute concomitant drug prescribing was assessed in 178324 children under the age of 18 years, registered with 161 general practices during the study period (01.11.1999 -31.10.2000). Data was retrieved from the Scottish Programme for Improving Clinical Effectiveness in Primary Care (SPICEpc) computerised data base, representing 21% of the Scottish population. All medicines prescribed to children receiving chronic AED therapy during the study year were identified and classified according to their potential to produce drug-drug interactions using the online data base DRUG-REAX by Micromedex. A total of 723 (0.42%) children chronically prescribed AED therapy were identified. The total number of AEDs prescribed was 14 with sodium valproate, carbamazepine and lamotrigine

accounting for 80% of the total. During the study year the children on chronic AED therapy received a total of 11891 prescriptions of which 4895 prescriptions were for 269 different non AED medicines. The average number of acute co-prescriptions per patient per year were 8.2, 11, 6, 6.2 for children aged 0-1, 2-4, 5-11, and 12-17 years respectively. Using the DRUG-REAX database, 6.7% (330) of all acute co-prescriptions prescribed to 80 children were identified as a potential source for drug interactions with their current AED therapy. The youngest age group (0-1 years) had the highest rate of potentially harmful co-prescriptions of 200/1000 children on AED therapy, the rate then decreased to 128/1000, 110/1000, and 98/1000 in the 2-4, 5-11 and 12-17 year olds respectively. Potentially clinically serious drug-drug interactions were found in 1.5% of co-prescriptions, prescribed to 3% of children with rates of 86/1000, 27/1000, 22/1000 and 33/1000 children on chronic AED therapy for the 0-1, 2-4, 5-11, 12-17 year olds respectively. The drugs most frequently co-prescribed and involved in potential drug-drug interactions were antacids, erythromycin, ciprofloxacin, theophylline and the low dose oral contraceptive.

In this study children on chronic AED therapy were prescribed a large number of acute co-prescriptions, a significant number of which could give rise to clinically important drug-drug interactions. Although the absolute number was small the highest incidence of such potentially harmful co-prescribing occurred in the youngest and most vulnerable age group.