

# Epilepsy Research Group

## *Clinical pharmacology of antiepileptic drugs*

### **Challenges**

To improve our knowledge for better antiepileptic drug treatment of the individual patient. Pharmacoepidemiological studies of antiepileptic drugs by the use of the Norwegian Prescription Registry contribute to new insight in pharmacological treatment of subpopulations and patient groups. We investigate changes in prescription patterns over time for specific drugs and combinations of drugs. Many drugs used in combination may lead to harmful effects over time, and often they are not discovered in clinical studies. Pharmacoepidemiological studies thus contribute to improved pharmacovigilance of drug treatment in a national and international scale. Population based studies may therefore improve our knowledge for better treatment of patients on the individual level, that will benefit subgroups of patients, e.g. in epilepsy or psychiatric disorders. Special patient groups that need individualized treatment include children, pregnant women and the elderly, due to extensive individual variability in pharmacokinetics, polytherapy and interactions, and individual factors. This variability may be accounted for by the implementation of therapeutic drug monitoring (TDM). Genetic variability may also be discovered, as a basis for "tailored therapy". Challenges include further investigations of factors contributing to individual variability in drug response and to provide new insight into tools in pharmacovigilance.

### **Projects**

- TDM of the newest antiepileptic drugs – implementation of analytical methods
- Utilization of antiepileptic drugs in epilepsy and their indications in Norway
- The elderly and the use of drugs in psychiatry and epilepsy
- Pharmacokinetic variability of antiepileptic drugs
- Treatment availability of antiepileptic drugs in Europe

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