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EHMTI-0022. Pharmacokinetic variability of drugs used for prophylactic treatment in migraine

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Introduction

In order to evaluate pharmacokinetic variability of preventive migraine drugs we have in this study reviewed single dose studies.

Methods

PubMed was searched for each drug with the "drugs generic name", "pharmacokinetics", and "single dose". Variability was calculated as coefficient of variation (CV).

Results

A total of 105 single-dose kinetic studies were reviewed but only a few representative results are presented:

Extended release propranolol 160 mg (n = 2): CV for Cmax = 45-55%, and CV for AUC: 43-48%. Propranolol 80 mg (n =1): Ratio for Cmax = 14 and ratio for AUC = 24. Metoprolol 100 mg (n = 2): CV for Cmax = 23-64%, and CV for AUC: 26-75%. Metoprol 100 mg (n = 1): Ratio for Cmax = 8 and ratio for AUC = 23. Extended release divalproex 500 and 1000 mg (n = 2): CV for Cmax = 12-21%, and CV for AUC: 19-30%. Topiramate 100 mg (n = 1): CV for Cmax = 16% and CV for AUC = 14%.. Candesartan 16 mg (n =2) : CV for Cmax = 31-34% and CV for AUC 26-28%.

Conclusion

A coefficient of variation of a pharmacokinetic parameter above 40% is considered to be high . The results for the AUCs of propranolol and metoprolol show high variability; and it is not likely that the migraine patients can be treated with a fixed dose-schedule with these two drugs. Instead dosing should in each case be tailored to the individual migraine patients.

No conflict of interest.

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