Debate: Does generic drug substitution pose risk in epilepsy? Position: yes

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Substitution of brands by generic drugs helped to save US consumers 160 billion US$ in 2010. The crucial question is, if change between brands and generic drugs and between generics and generics is safe in regard of seizure control. Seizure recurrence after a previous period of seizure freedom may have paramount impact on driving and working restrictions. The two pharmacokinetic parameters assessed in bioquivalence studies are maximum serum concentration (C_{max}) and area under the concentration–time curve (AUC). The regulatory authorities allow that in generics both parameters may be up to 25% higher and up to 20% lower compared those in brands. In the extreme, this would mean that switching from one generic to another may expose patients to massive fluctuations in serum concentration of up to 45%. Even if recent findings on two different generic preparations of lamotrigine showed bioequivalence with no detectable differences in seizure frequency and tolerability, therapeutic equivalence may be challenged by patients‘ attitudes towards switching between differently appearing antiepileptic drugs. A case-control-study on antiepileptic drug generics with different color or shape indicated that changes in pill color significantly increase non-adherence. In conclusion, switching from brands to generic antiepileptic drugs significantly saves costs but patients need to be followed closely by therapeutic drug monitoring. After switching to a generic drug, the patients should stick to this particular generic. If generics are available when an antiepileptic drug is initiated, put patients on a generic drug to reduce costs but they need to stick to that particular generic.