Drugs 2006; 66 (2): 231-233
0012-6667/06/0002-0231/$44.95/0

Tramadol Sustained-Release Capsules

A Viewpoint by Miquel Casals

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It is obvious that sustained-release (SR) formulations have an advantage over immediate-release (IR) formulations in that they allow treatment to be simplified, and therefore patients' adherence to the prescribed treatment may be enhanced.

However, clinicians should bear in mind that SR formulations have advantages besides merely prolonging the dosing interval.

SR formulations produce more stable plasma concentrations than the corresponding IR oral formulations, and therefore have the potential to produce a more constant therapeutic effect. Indeed, it is interesting to note that rapidly decreasing plasma concentrations associated with IR formulations is one of the reasons for an intermittent therapeutic effect. Moreover, SR formulations can also improve the tolerability of IR formulations, as the incidence or the intensity of the adverse reactions associated with abrupt peak plasma concentrations should decrease.

Within this context, the drug review on tramadol SR capsules in this issue contains some interesting findings. One of them is that this formulation produces plasma profiles that are not only smoother than those produced by tramadol IR capsules, as expected, but also more stable than those produced by tramadol SR tablets. Clearly, the reasons behind these differences are related to the different SR technologies associated with these two formulations.

The other interesting result is that the SR capsules produce less variability in tramadol absorption than tablets. Accordingly, its therapeutic effect should be more constant over time. In this case, the reason behind this difference is purely physical. The tramadol granules contained inside capsules, due to their small size, are less dependent on gastric-emptying rates than tablets, and consequently, they reach the intestine in a more reproducible manner.

The conclusion to be extracted when all these results are considered together is that although two drug formulations may appear similar, the selection of one particular drug formulation over another may lead to differences in pharmacokinetic performance and, as a result, to the clinical effect produced. However, as it is not common to find comparisons of this type published in the literature, prescribers may not be aware of such differences. ▲