

Stavudine Once Daily A Viewpoint by Santiago Moreno

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Stavudine is a nucleoside analogue reverse transcriptase inhibitor of HIV that is widely used in antiretroviral regimens due to its efficacy, high genetic barrier, and favourable toxicity profile.

The new once-a-day formulation of stavudine seems to be designed with the main purpose of improving patient adherence to therapy. Simplification is now a key point of any antiretroviral regimen, and once-daily administration is the preferred choice for patients and physicians. Stavudine once daily can be combined with a number of drugs so that the full triple-drug regimen will be administered once daily. Stavudine once daily has shown a similar efficacy to stavudine immediate release (IR) in decreasing HIV viral load and improving CD4+ cell count in clinical trials, including a large comparative trial.

However, the pharmacokinetic data for stavudine once daily suggest that this new formulation could bring additional benefits to the patient. Firstly, stavudine once daily has a peak plasma concentration (C_{\max}) that is 50% lower than that of stavudine IR. This lower C_{\max} could be associated with a decreased toxicity, which would be especially important in the case of mitochondrial toxicity. Secondly, stavudine once daily reaches a mean minimum plasma concentration (C_{\min}) that is 2- to 3-fold greater than that of stavudine IR. The higher C_{\min} makes it likely that stavudine once daily has an even lower capacity for selecting resistance mutations and a higher inhibitory quotient, which may be useful for strains that show resistance to stavudine in its present formulation. Clinical trials, together with clinical experience, will draw the definite profile of the drug.

It could well prove that, in effect this new formulation is providing us with a new drug. ▲