Lower Norvir Boosting Dose Possible

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Three protease inhibitors (PIs)—Invirase (saquinavir), Prezista (darunavir) and Lexiva (fosamprenavir)—might require a lower dose of Norvir (ritonavir) to boost their blood levels than is currently recommended, according to a study published November 13 in *AIDS*.

Most commonly used PIs are typically combined with low-dose Norvir in order to boost their blood levels, making them more effective and generally easier to take. Unfortunately, Norvir is noted for causing diarrhea and nausea, as well as increasing cholesterol and triglycerides. Researchers and activists have long asked if Norvir can be used at even lower doses than are currently recommended in order to minimize such side effects.

Andrew Hill, PhD, of Liverpool University in the United Kingdom, and his colleagues reviewed 17 studies of Norvir's effect on the blood levels of other PIs to determine whether using a lower boosting dose of Norvir might be possible. For Invirase, the current approved dose is 1,000 mg of Invirase combined with 100 mg of Norvir, taken twice daily. But other dosing strategies have been explored. A recent Thai study, for example, found that when combined with 1,500 mg of Invirase once daily, a boosting dose of 50 mg of Norvir was equivalent to 100 mg.

For Lexiva, there have been no studies using a lower dose of Norvir. There have, however, been studies where higher doses of Norvir were combined with Lexiva. These did not result in correspondingly higher blood levels of Lexiva. Thus, the authors suggest it is possible that a lower Norvir boosting dose might be a feasible alternative. The same is true for Prezista, where studies failed to find a significant increase in Prezista blood levels upon using higher Norvir doses.

Hill and his colleagues also looked at studies with lopinavir (combined with ritonavir in Kaletra), Reyataz (atazanavir), Crixivan (indinavir) and Aptivus (tipranavir). With lopinavir, Crixivan and Aptivus, there was evidence that the dose of Norvir had a direct effect on the blood levels of these drugs. The impact on Reyataz was not consistent, and the researchers suggest it is possible that lower doses of Norvir might also be possible with Reyataz.

The authors conclude by saying that further dose-ranging studies would be needed to draw firm conclusions, but that lower and higher doses of Norvir appear to have the same effect on the blood levels of Invirase, Prezista and Lexiva. Studies would also be needed to determine whether lower-dose Norvir boosting would necessarily reduce the risk and severity of side effects. They also comment that further research might help inform studies of newer agents designed to boost PI blood levels.