



PIC QUESTION OF THE WEEK: 3/24/08

Q: What is the best time of day to administer the *statins*?

A: Hydroxymethylglutaryl-coenzyme A (HMG-CoA) reductase inhibitors, also referred to as *statins*, are some of the most frequently prescribed drugs in the world. They not only reduce low-density lipoprotein cholesterol (LDL-C) levels and, to a lesser extent triglycerides, but also decrease markers (e.g. C-reactive protein; CRP) of inflammation. Although the drugs possess many similarities, differences do exist in labeled indications, ability to lower LDL-C, frequency of some adverse effects, potential for drug interaction, and *timing of administration*. Peak cholesterol synthesis appears to occur in the early morning hours, generally between midnight and 3 am. Drugs such as lovastatin, simvastatin, and fluvastatin have relatively short elimination half-lives and their labeling recommends they be taken in the evening. On the other hand, atorvastatin, rosuvastatin, and pravastatin, along with their metabolites, possess half-lives of twenty or more hours. Labeling for these three agents advises that they be administered at any time of the day. Some publications suggest that *statins* are generally most effective when taken in the evening. A relatively recent review of the literature on this topic indicates there is sufficient data to support a greater effect of simvastatin on LDL-C levels if it is taken in the evening rather than the morning. The authors also concluded that available data suggests atorvastatin can be administered during any period of the day. A statistically significant difference in LDL-C values was not observed for *statins* such as lovastatin, pravastatin, or rosuvastatin; however the authors indicated a trend toward lower levels when these drugs were given in the evening. Based on current data, it would seem appropriate to continue to recommend that *statins* with short half-lives (simvastatin, lovastatin, and fluvastatin) be administered in the evening while those with more prolonged half-lives (atorvastatin, pravastatin, and rosuvastatin) can be taken at any time of the day.

References:

- Drugs for lipids. Treat Guidel Med Lett 2008;6:9-16.
- Plakogiannis R, Cohen H. Optimal low density lipoprotein cholesterol lowering – morning versus evening statin administration. Ann Pharmacother 2007;41:106-10.
- Do all statins need to be taken in the evening? Pharmacist's Letter/Prescriber's Letter 2003;19(12):191206.

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