# Atorvastatin or Lovastatin or Simvastatin + Clarithromycin

Simvastatin, atorvastatin, and lovastatin are HMG-CoA Reductase Inhibitors used to treat hyperlipidemia. To differing extent, these medications are metabolized by the CYP3A4 and are somewhat dependent on the SLCO1B1 (OATP1B1) transporter for hepatic uptake. Clarithromycin inhibits both the CYP3A4 enzyme and the SLCO1B1 transporter. This leads to reduced clearance and increased serum concentration of simvastatin, atorvastatin, and lovastatin that may lead to myopathy including rhabdomyolysis.

| HMG-CoA Reductase Inhibitors | Atorvastatin | | Lovastatin | Simvastatin |
|---|---|---|---|---|
| Dose of atorvastatin | Less than or equal to 20 mg/day | Greater than 20 mg/day | | |
| Any dose of lovastatin | | | | |
| Any dose of simvastatin | | | | |
| Increased atorvastatin side effects unlikely | ■[1] | | | |
| Increased atorvastatin side effects likely | | ◆[1] | | |
| Increased lovastatin side effects likely | | | ◆[2] | |
| Increased simvastatin side effects likely | | | | ◆[2] |

○ = No special precautions. ■ = Assess risk and take action if necessary. □◆ = Use only if benefit outweighs risk

**Footnotes**:

1. Atorvastatin has been examined with concomitant use of azithromycin, clarithromycin, and erythromycin. While serum concentrations significantly increase, doses less than 20 mg/day seem unlikely to result in severe myopathies or rhabdomyolysis. Reducing dose to 20 mg/day or less and additional monitoring for atorvastatin toxicity is recommended if this combination is used. (Amsden et al. J Clin Pharmacol. 2002; 42(4):444-449) (Siedlik et al. J Clin Pharmacol. 1999; 39(5): 501-504)
2. The combination of clarithromycin and simvastatin or lovastatin is not recommended. It would be reasonable to hold the HMG-CoA Reductase Inhibitor treatment during clarithromycin therapy. Depending on the duration of clarithromycin therapy and patient factors, switching the HMG-CoA Reductase Inhibitor to one that is not dependent on CYP3A4 metabolism may be appropriate (Alreja et al. Cardiovasc Dis Res. 2012; 3(4): 319-322) (Grunden and Fisher. Ann Pharmacother. 1997; 31(7-8): 859-863) (Strandell et al. Br J Clin Pharmacol. 2009; 68(3): 427-434) (Page and Yee. Intern Med J. 2014; 44(7): 690-693) (Lee and Maddix. Ann Pharmacother. 2001; 35(1):26-31)

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