# Is There a Role For Statin Therapy in Acute Viral Infections?

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When assessing the role of statin therapy in patients with acute viral infections given their anti-inflammatory effects, the following questions need to be addressed. First, are cardiovascular and general outcomes improved with the continuation of statin therapy among those already on statin therapy? Second, does *de novo* initiation of statin therapy have a role in preventing complications from viral illnesses including COVID-19? Third, is there any harm associated with statin therapy use in acute viral illnesses?

Some but not all observational studies suggest that statin therapy is associated with a reduction in various cardiovascular outcomes and possibly mortality in patients admitted with influenza and/or pneumonia.[1-5] Therefore, it is conceivable that patients admitted with viral respiratory illnesses including COVID-19 could derive a beneficial effect from the continuation of their statin therapy. However, given the observational nature of these studies, a healthy user bias cannot be totally excluded to explain the positive results.

The limited evidence is mixed. One randomized controlled trial (RCT) showed possible beneficial effects of oral administration of statin in reducing mortality in those with ventilator associated pneumonia.[6] In contrast, the results of another RCT do not support statin administration in those with ventilator-associated pneumonia.[7]

It is important to note that in these studies, there was no harm associated with statin therapy. In addition, most of these studies included patients with influenza virus or bacterial pneumonia, rather than coronaviruses. Although some have suggested that statins may be beneficial in those with MERS-COV[8] (other beta coronavirus like the current 2019n-COV), there are no large scale observational or randomized studies to support this.

In summary, emphasizing continuation and adherence to statin therapy in patients with clinical atherosclerotic cardiovascular disease (ASCVD), diabetes, or those at high-risk of ASCVD makes intuitive sense. This is important as the case-fatality rates with COVID-19 infection are extremely high in those with established cardiovascular disease (10.8%) and diabetes (7.3%).[9] Furthermore, statin therapy should be continued in patients with suspected COVID-19 infection as acute cardiac injury has been described in these patients.[9] Clinicians should also pay close attention to ensure that their high-risk primary prevention patients are also on guideline-directed statin therapy in the outpatient setting. This will help mitigate some of the increased risk of cardiovascular events associated with COVID-19 infection. In patients with active COVID-19 infection who may develop sever rhabdomyolysis (frequency unknown at this time), it may be prudent to withhold statin therapy for a short period of time.