**Anticoagulant Effects of Statins**

The statin class of medication is effective in reducing low-density lipoprotein (LDL) cholesterol and can reduce the risk of major cardiovascular events by 20-25%. Compelling evidence indicates that statins decrease all-cause death in patients that have had a previous cardiovascular event (secondary prevention) and likely decrease cardiovascular events in those with potent cardiovascular risk factors (primary prevention).

We are now aware of a number of beneficial effects of statins that can occur in populations with normal LDL levels. These pleiotropic effects involve suppression of inflammation, inhibition of cardiac hypertrophy, improvement in vascular endothelial function and more recently the realization that statins have anticoagulant properties. A number of in vitro and in vivo studies of statins have demonstrated a modest reduction in both coagulation and platelet function. Statins are involved in a reduction in Tissue Factor expression as well as thrombin generation but the exact mechanisms for both activities are unknown.

Still, several studies have shown statins to specifically lower venous thromboembolic events (VTE) by 20-40% regardless of patient age, the presence of cardiovascular disease or LDL levels.

This risk reduction appears valid for both idiopathic and provoked VTE but tends to be limited to only the reduction of deep vein thrombosis (primary and recurrent) and recurrent pulmonary embolus. Since patients receiving statin therapy invariably have reduced blood cholesterol, the relative strength of the anticoagulant effect compared to the lipid-lowering action is hard to assess.

In the light of inconsistent evidence, it still remains to be determined which statins, at which doses and in which populations can be effective in reducing first-ever and recurrent venous thromboembolism. Currently, this class of drugs is in no way a substitute for the oral anticoagulants and antiplatelet drugs we routinely prescribe.

It continues to be an honor to help care for your patients.

Gary Dworkin, MD RPVI