



News Release

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ATS Press Room: 504-670-6926 (May 15 to 20)

Poster session time: 8:15-4:00 p.m. May 16

Location: CC-Area K, Hall G (First Level), Morial Convention Center

Statins Decrease Risk of Clot-Related Diseases

ATS 2010, NEW ORLEANS— Individuals at risk for clot-related diseases may benefit from taking common cholesterol-lowering drugs known as statins, according to a study conducted by researchers at the University of Connecticut.

The results of the study will be presented at the ATS 2010 International Conference in New Orleans.

“Previous clinical studies have indicated statins may play a role in lowering the risk of these conditions, but these studies have yielded variable estimates of the effect of statin therapy,” said lead author Vanjul Agarwal, M.B.B.S. “In our study, we aimed to analyze and evaluate the effect of these drugs in patients with specific conditions related to vessel blockages.”

While other studies have focused on the effects of specific statin drugs, Dr. Agarwal said the current analysis sought to evaluate the effect of statins as a whole. Researchers reviewed the results of 10 studies of more than 900,000 men and women evaluating the effect of statins in preventing venous thromboembolism (VTE), clots formed in the deep veins which pose a serious risk for heart attack and stroke. Dr. Agarwal noted that the current study included all types of VTE, with a focus on deep vein thrombosis (DVT),

most commonly involving clots in the lower legs, and pulmonary embolism (PE), clots that form in the primary vessels of the lungs after migrating from other areas of the body, usually the legs, pelvis or, rarely, arms. According to study results, statin use benefited patients with all types of VTE, including DVT and PE.

Both PE and DVT can be asymptomatic and therefore difficult to detect, or easy to misdiagnose. According to the Centers for Disease Control, about 200,000 to 400,000 people in the U.S. have DVT and about 100,000 to 200,000 people have a PE. Nearly one-third of individuals with a PE die as a result of the condition.

Dr. Agarwal said statins are believed to decrease the risk of VTE by reducing inflammation, one of the factors involved in clot formation. “Statins have been found to have anti-inflammatory properties. Since thrombus formation involves inflammation, statins may reduce venous thrombus formation and thus, lower the odds of developing PE/DVT,” she said.

Dr. Agarwal noted future randomized, controlled trials may help determine a course of statin therapy for patients most at risk for developing VTE.

“Patients at high risk for developing PE or DVT may be prescribed statins prophylactically,” she said. “In these patients, regular use of statins could significantly reduce the incidence of PE and DVT.”

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“What Effect do Statins Have on the Development of Venous Thromboembolism? A Comprehensive Meta-Analysis of Over 900,000 Patients” (Session A56, Sunday, May 16, 8:15- 4:00 p.m., CC-Area K, Hall G (First Level), Morial Convention Center; Abstract 4499)

**Please note that numbers in this release may differ slightly from those in the abstract. Many of these investigations are ongoing; the release represents the most up-to-date data available at press time.*

What Effect Do Statins Have On The Development of Venous Thromboembolism? A Comprehensive Meta-Analysis of Over 900,000 Patients

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Rationale: Statins are thought to have antithrombotic properties and thus may attenuate patients' odds of developing VTE. Clinical studies have yielded variable estimates of the effect of statin therapy on the risk of VTE. We aimed to conduct a meta-analysis to evaluate the effect of statin use on development of venous thromboembolism (VTE).

Methods: Both randomized controlled trials and observational studies evaluating the effects of statins on the incidence of VTE were selected from Medline (1950-August 2009), Cochrane CENTRAL (2nd quarter, 2009), SCOPUS (1966-August 2009) and a manual review of references. While, no further restrictions were placed on randomized trials; observational studies had to report adjusted analyses using multivariate regression or covariate matching to be included. Data on the development of deep vein thrombosis (DVT), pulmonary embolism (PE) and any VTE (DVT or PE) from randomized controlled trials and observational studies were analyzed using traditional meta-analytic techniques. A random-effects model was used in all cases. Results are reported as adjusted odds ratios (AORs) with 95% confidence intervals (CIs).

Results: A total of 10 studies were identified and eligible for meta-analysis. JUPITER was the only randomized trial eligible for inclusion. Results of meta-analyses are displayed in the Table.

Conclusion: The totality of clinical study evidence suggests that statins can reduce patients' odds of developing DVT or PE.

Table. Effect of Statins on Venous Thromboembolism			
Analysis	VTE†* AOR (95% CI)	DVT Only* AOR (95% CI)	PE Only* AOR (95% CI)
Randomized Controlled Trials (JUPITER, 2009)	0.57 (0.37-0.86) n=17,802	0.45 (0.25-0.79) n=17,802	0.77 (0.41-1.45) n=17,802
Observational Studies Only	0.69 (0.54-0.89) n=827,643	0.62 (0.44-0.88) n=216,928	0.70 (0.50-0.98) n=91,066
All studies	0.68 (0.54-0.86) n=845,445	0.59 (0.43-0.82) n=234,730	0.70 (0.53-0.94) n=108,868

AOR=adjusted odds ratio; CI=confidence interval; DVT=deep vein thrombosis;
PE=pulmonary embolism
*Test for interaction between JUPITER and observational studies not statistically significant ($p>0.44$ for all)
† VTE = At least one occurrence of either PE, DVT or both