Bupropion for Smoking Cessation in Patients with Acute Cardiovascular Disease: A Systematic Review and Meta-Analysis of Randomized Controlled Trials

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Background:
Hospitalization for acute cardiovascular disease (CVD) provides a unique opportunity for initiation of smoking cessation therapies. We therefore performed a metaanalysis to determine the efficacy and safety of bupropion therapy started in-hospital for smoking cessation in acute CVD patients.

Methods:
We systematically searched the medical literature to identify randomized controlled trials (RCTs) of in-hospital initiation of bupropion therapy for smoking cessation in acute CVD patients. RCTs reporting smoking abstinence at 6 or 12 months were included.

Results:
Three RCTs, including 773 patients, were included in our analyses. Participants were predominantly male (range of means: 69.0-83.8%) and the majority were hospitalized with an acute coronary syndrome (range of means: 66-100%). At end of treatment, bupropion was associated with a significant increase in point prevalence abstinence [Risk Ratio (RR) 1.21, 95% Confidence Interval (CI) 1.02, 1.45), but not continuous abstinence (RR 1.19, 95% CI 0.97, 1.45). However, bupropion was not associated with a significant increase in point prevalence abstinence (RR 1.17, 95% CI 0.92, 1.48) or continuous abstinence (RR 1.16, 95% CI 0.90, 1.50] at 12 months. The results of the pooled analysis for major adverse cardiac and cerebrovascular events (MACCE) were inconclusive (RR 1.28, 95% CI 0.93, 1.78).

Conclusions:
We found that bupropion improved abstinence, over placebo, at end of treatment but this effect did not persist at 12 months. Due to inconsistent reporting of safety data, the safety profile of bupropion therapy in this patient population remains unclear