

## **Effects of anticoagulant and antiplatelet drugs on the risk for hospital admission for traumatic injuries: a case-control and population-based study.**

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### **BACKGROUND:**

The current cardiovascular literature advocates an overall beneficial balance between the advantages of oral anticoagulants and antiplatelet drugs in preventing and treating thromboembolic events and their disadvantages in promoting hemorrhage. However, traumatic injuries have usually received little attention despite several studies from the surgical literature showing worse outcomes in anticoagulated trauma registry patients. To quantify at population level too this seemingly deleterious impact, we investigated the effects of anticoagulants and antiplatelet use on the risk for hospital admission for acute traumatic causes.

### **METHODS:**

A population-based, case-control study in an Italian region with 4.5 million inhabitants was conducted. Cases were all the 59,348 adult residents admitted to the hospital for traumatic injuries in the years 2010 and 2011. Controls were age- and sex-matched residents selected by incidence density sampling. By conditional logistic regression adjusted for comorbidities, we estimated the risk for traumatic hospital admission while on anticoagulant, antiplatelet, and combined medications.

### **RESULTS:**

The odds ratios (ORs) for anticoagulation and combined medications were 1.21 (95% confidence interval [CI], 1.15-1.28) and 1.39 (95% CI, 1.21-1.62). These effects were generally consistent across subgroups of demographic and clinical characteristics and particularly important in the head injured (e.g., OR for anticoagulation, 2.00; 95% CI, 1.77-12.27). Antiplatelets alone had no overall effect (OR, 1.02; 95% CI, 0.99-1.05). The number-needed-to-harm of anticoagulation was 595.

### **CONCLUSION:**

Oral anticoagulation increased the population risk for traumatic hospital admission, with a further increase in case of concurrent antiplatelet use. Because this effect is most likely to derive from the prohemorrhagic properties of these drugs, injured patients should be included in the future evaluations of the cost-benefit profiles of these medications.

### **LEVEL OF EVIDENCE:**

Epidemiologic/prognostic study, level III.