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Depression and risk for atrial fibrillation

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Background & Aim: While it is known that depression and atrial fibrillation (AF) are each associated with increased risk of ischemic stroke, and depression is associated with greater AF severity, it is unknown if depression is associated with greater risk of developing AF. Therefore, we studied whether depression is associated with increased risk for incident AF.

Method: We performed a nation-wide, register-based, matched cohort study comparing all patients initiating antidepressant treatment during 2000-2013 with a reference group matched 1:5 on gender and birth-month. Hazard ratios (HRs) adjusted for civil status and comorbidity were calculated using stratified Cox-regression. To distinguish between possible effects of depression and antidepressants, HRs were evaluated both before and after treatment. Potential monitoring bias was assessed using data on the number of electrocardiograms (EKGs) performed in general practice.

Results: We identified 886,402 patients initiating antidepressant treatment. Patients had a markedly elevated risk of AF within the first month of antidepressant treatment (adjusted HR=3.24 [95% CI: 3.00-3.50]), gradually attenuating to 38% [31%-46%] greater risk after 2-6 months and 16% [10%-22%] for the rest of the first year. However, their risk for AF was even higher in the 2 weeks before antidepressant treatment (HR=4.29 [3.87-4.79]). In the 2 months surrounding antidepressant initiation, 3.6% of patients had an EKG in general practice, corresponding to approximately 4-times more EKGs versus the reference group (highest incidence rate ratio of EKG=4.42 [4.30-4.55] in the 2 weeks pretreatment).

Conclusions: The risk for AF is high shortly after initiating antidepressant treatment but the association need not be causal. An even higher risk during the two weeks prior to treatment suggests that the association could be due to depression or related factors. While patients treated with antidepressants were more likely to have EKGs done, this factor does not appear to completely account for the observed association.