Attention-deficit hyperactivity disorder and anxiety disorders as precursors of bipolar disorder onset in adulthood

Meier SM, Pavlova B, Dalsgaard S, Nordentoft M, Mors O, Mortensen PB, Uher R.


Abstract

BACKGROUND:
Attention-deficit hyperactivity disorder (ADHD) and anxiety disorders have been proposed as precursors of bipolar disorder, but their joint and relative roles in the development of bipolar disorder are unknown.

AIMS:
To test the prospective relationship of ADHD and anxiety with onset of bipolar disorder.

METHOD:
We examined the relationship between ADHD, anxiety disorders and bipolar disorder in a birth cohort of 2 409 236 individuals born in Denmark between 1955 and 1991. Individuals were followed from their sixteenth birthday or from January 1995 to their first clinical contact for bipolar disorder or until December 2012. We calculated incidence rates per 10 000 person-years and tested the effects of prior diagnoses on the risk of bipolar disorder in survival models.

RESULTS:
Over 37 394 865 person-years follow-up, 9250 onsets of bipolar disorder occurred. The incidence rate of bipolar disorder was 2.17 (95% CI 2.12-2.19) in individuals with no prior diagnosis of ADHD or anxiety, 23.86 (95% CI 19.98-27.75) in individuals with a prior diagnosis of ADHD only, 26.05 (95% CI 24.47-27.62) in individuals with a prior diagnosis of anxiety only and 66.16 (95% CI 44.83-87.47) in those with prior diagnoses of both ADHD and anxiety. The combination of ADHD and anxiety increased the risk of bipolar disorder 30-fold (95% CI 21.66-41.40) compared with those with no prior ADHD or anxiety.

CONCLUSIONS:
Early manifestations of both internalizing and externalizing psychopathology indicate liability to bipolar disorder. The combination of ADHD and anxiety is associated with a very high risk of bipolar disorder.