

# Incidence of Cardiac Events among Children and Young Adults Exposed to Psychopharmacological Treatment (2006-2018) - A Nationwide Register-Based Study.

Howaida Elmowafi<sup>1</sup>, Jenny Kindblom<sup>2</sup>, Linda Halldner<sup>1</sup>, David Gyllenberg<sup>3</sup>, and Estelle Naumburg<sup>1</sup>

<sup>1</sup>Umea Universitet

<sup>2</sup>Sahlgrenska University Hospital

<sup>3</sup>Helsinki University Hospital Psychiatry

July 20, 2024

## Abstract

**Abstract Aim:** To assess cardiac event incidence and trends by sex and age in young patients on psychopharmacological treatment in Sweden. **Methods:** This nationwide incidence study encompassed data from Swedish registers (2006–2018). Patients aged 5–30 years were exposed to one or more psychotropic medications (attention deficit hyperactivity disorder medications, antihistamines, selective serotonin reuptake inhibitors, other antidepressants, anxiolytics, antipsychotics, hypnotics/sedatives). Annual incidences, trends, and mean incidences of cardiac events (cardiac arrest, arrhythmias, fainting/collapse, sudden death) and recurrent events were calculated. **Results:** Among those exposed (n=875,430, 2,647,957 patient-years, 55% female), 26,750 cardiac events were identified. The mean annual incidence of cardiac events and first-ever events were 0.98% and 0.80%, respectively, showing significant upward annual trends of 4.26% and 2.48%, respectively (p<0.001). The highest incidences were among females aged 15–19 years (1.50%) and those exposed to polypharmacy (1.63%), anxiolytics (1.53%), or antihistamines (1.27%). The mean annual incidences of cardiac arrest and arrhythmias, for both sexes, were 0.01% and 0.51%, respectively. Fainting/collapse accounted for about half of all events, occurring more often in females. The pattern of rising annual incidence remained after excluding fainting/collapse. In all, 21.1% of events were recurrent. Sudden death occurred in thirteen patients. **Conclusions:** The mean annual incidence of cardiac events among young patients receiving psychopharmacological treatment was low, 0.98%, with an upward trend of 4.26% annually. Incidence was highest in females and patients exposed to polypharmacy. Our study highlights the need for more knowledge regarding the possible association between exposure to psychopharmacological treatment and cardiac events.

## Hosted file

BJCP -Incidence study 3-6-2024.docx available at <https://authorea.com/users/807306/articles/1204475-incidence-of-cardiac-events-among-children-and-young-adults-exposed-to-psychopharmacological-treatment-2006-2018-a-nationwide-register-based-study>

## Hosted file

Figure 1.docx available at <https://authorea.com/users/807306/articles/1204475-incidence-of-cardiac-events-among-children-and-young-adults-exposed-to-psychopharmacological-treatment-2006-2018-a-nationwide-register-based-study>

## Hosted file

Figure 2-Incidence Study.docx available at <https://authorea.com/users/807306/articles/1204475-incidence-of-cardiac-events-among-children-and-young-adults-exposed-to-psychopharmacological-treatment-2006-2018-a-nationwide-register-based-study>

### Hosted file

Figure 3-Incidence Study.docx available at <https://authorea.com/users/807306/articles/1204475-incidence-of-cardiac-events-among-children-and-young-adults-exposed-to-psychopharmacological-treatment-2006-2018-a-nationwide-register-based-study>