Karolinska Institutet

From the DEPARTMENT OF CLINICAL NEUROSCIENCE

ADHD IN SUBSTANCE USE DISORDERS

PREVALENCE AND PHARMACOTHERAPY

AKADEMISK AVHANDLING
som för avläggande av medicine doktorsexamen vid Karolinska Institutet offentligen försvaras i Leksellsalen, Eugeniahemmet, Karolinska Solna

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Abstract

Substance use disorders (SUD) and Attention deficit /hyperactivity disorder (ADHD) are persistent and prevailing disorders that conjointly are associated with negative life-events and mental distress. The overall aim of this thesis was to examine the rate of ADHD in substance using populations and to investigate the feasibility and efficacy of methylphenidate pharmacotherapy for treatment of co-existing ADHD and SUD.

The prevalence of ADHD was investigated in **Studies I and II,** which were cross-sectional investigations including two stages: screening and assessment. Study I included seven countries; France, Hungary, the Netherlands, Norway, Spain, Sweden, and Switzerland. Study II comprised incarcerated women in Swedish prisons. An initial screening was completed with WHO's Adult ADHD Self-Rating Scale (ASRS). The assessment included Conners' Adult ADHD interview for DSM-IV (CAADID) as a 'gold standard' for ADHD diagnosis. For differential diagnostics, the MINI Plus interview was used for mood disorders, antisocial personality disorder (ASP) and SUD, and SCID-II was used to assess borderline personality disorder (BPD). The results show that compared to the general population, the rate of ADHD is higher both in treatment-seeking substance users and in female prisoners (Study I and II).

Studies III and IV were randomized, double-blind, placebo-controlled trials with parallel groups design investigating the safety and efficacy of methylphenidate (MPH) for treatment of ADHD in amphetamine dependent patients. Study III was a 12-week trial investigating 18-72mg/day MPH in treatment-seeking outpatients (men and women) with change in ADHD symptoms as the primary outcome measure. Study IV was a 24-week trial investigating 18-180 mg/day MPH in men recruited from medium security prisons. The participants started treatment within two weeks before release from prison and continued treatment in an outpatient clinic. The primary outcome measure in Study IV was relapse to illicit drug use. Results from Study III show that both treatment groups significantly improved their ADHD symptoms, but there were no significant differences between the groups in either ADHD or substance use outcome measures. In study IV, compared to placebo treatment, MPH treatment resulted in significantly more negative urine samples, improvement in ADHD symptoms, and better retention in treatment.

Collectively, the findings from the epidemiological studies suggest that a significant number of individuals with SUD are also afflicted with ADHD. It is important that more attention is given to adult ADHD in addiction treatment centres and in criminal justice systems in order to address the clinical needs of this population. The results from the present clinical trials suggest that MPH given in structured settings may be safe to use in currently abstinent amphetamine dependent individuals with ADHD. A flexible dose range with a higher maximum dose improved ADHD symptoms, clinical condition and retention in treatment, and reduced the risk for relapse to illicit drug use in long-term drug dependent individuals.

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