Introduction

Autism spectrum disorder (ASD) is a persistent neurodevelopmental condition characterised by social communication impairment and stereotyped repetitive pattern of behaviours. Antipsychotic medication is a commonly prescribed drug class in individuals with ASD. However, the safety and tolerability of these agents have not been fully assessed, with only limited long-term safety studies in the ASD population.

Aim

To review the safety and tolerability profile of antipsychotic medication in individuals with ASD.

Method

This study is a systematic review and meta-analysis of randomised controlled trials (RCTs) and observational studies on the safety of antipsychotic medication in patients diagnosed with ASD. The Cochrane Library, Medline, Embase and PsycINFO databases were searched up to January 2018, using appropriate MeSH terms and keywords. Studies included patients of any age, taking any antipsychotic medication (1st or 2nd generation) and that reported any adverse events (AEs) in individuals with ASD. The primary outcome of this review was AEs of any severity reported with antipsychotics. Meta-analysis was performed to estimate both the pooled prevalence of the overall adverse events and the pooled relative risk of adverse event using a random effect model.

Results

2,805 records were identified. 53 studies fulfilled the inclusion criteria, of which 39 were RCTs and 14 were observational studies. Most of the studies were based on 2nd generation antipsychotics, specifically risperidone and aripiprazole.

Antipsychotic treatment increased the risk of developing AEs by 22% compared to placebo (RR= 1.22, 95% CI: 1.11-1.34, P= 30.6%, p= 0.184), the forest plot of the meta-analysis is shown in Figure A. Seven observational studies were included in the meta-analysis to estimate the pooled prevalence of AEs which was 50.5% (95% CI: 33-67), Figure B shows the forest plot of the prevalence meta-analysis. A wide range of AEs was identified. A total of 127 AEs were identified in the included studies, central nervous system (CNS) event were the most frequent AEs identified in the RCTs included followed by endocrine disorders and gastro-intestinal disorders, respectively (Figure C). The most commonly reported AEs were increased appetite and weight gain, which were associated with discontinuation in many participants. Other AEs that were reported included extrapyramidal side effects, prolonged QT interval, seizures and hyperprolactinemia.

Conclusions

Antipsychotic-related AEs among patients with ASD were common. Antipsychotic could increase the risk of developing AEs by 22% compared to the placebo. The most frequent AEs experience with antipsychotics use are CNS AEs. Further studies to investigate the implications of antipsychotic-related AEs on health and medication adherence are warranted.

References