Research in Developmental Disabilities 35 (2014) 711–725

Contents lists available at ScienceDirect

Research in Developmental Disabilities

Review article

The effectiveness of aripiprazole in the management of problem behaviour in people with intellectual disabilities, developmental disabilities and/or autistic spectrum disorder – A systematic review

Shoumitro Deb [a], Baldeep K. Farmah [b], Ebrahim Arshad [c], Tanya Deb [a], Meera Roy [d,*], Gemma L. Unwin [e]

[a] Imperial College, London, UK
[b] School of Psychiatry, West Midlands Deanery, Birmingham, UK
[c] University of Birmingham, UK
[d] Birmingham Community Healthcare NHS Trust, UK
[e] School of Psychology, University of Birmingham, UK

ARTICLE INFO

Article history:
Received 23 October 2013
Accepted 10 December 2013
Available online 7 January 2014

Keywords:
Aripiprazole
Intellectual disabilities
ASD
Developmental disabilities
Problem behaviour
Self-injurious behaviour
Aggression

ABSTRACT

The management of problem behaviours (PB) in individuals with intellectual disabilities (ID), developmental disabilities (DD) and/or autistic spectrum disorders (ASD) can be challenging. Antipsychotic medications are commonly prescribed where other strategies have failed. A systematic review (SR) was conducted to establish the research evidence for the efficacy of aripiprazole in the management of PB in adults and children with ID, DD and/or ASD. Although included studies supported the efficacy of aripiprazole for this indication, the overall quality of studies was poor. Of the 20 studies included in this systematic review there were only two randomised controlled trials (RCTs) on children with ASD and/or ID/DD, both of which were conducted by the pharmaceutical company that manufactures aripiprazole, and it is not clear whether a number of same participants were included in both RCTs. One of the RCTs was extended into an open label long term follow up, which showed that aripiprazole's efficacy lasted over 52 weeks and the adverse effects were tolerable. Four studies were open label prospective studies, 11 were retrospective case reports which included four single case reports, and two were prospective case series. Most studies reported adverse effects from aripiprazole in the form of weight gain, increased appetite, sedation, tiredness, drooling and tremor. However, aripiprazole improved serum prolactin level in some participants and overall did not show any adverse effect on QTc interval. There is a need for more carefully designed RCTs into the use of aripiprazole in the management of PB in people with ID/DD and/or ASD, which should be carried out independent of pharmaceutical companies.

Contents

* Corresponding author. Tel.: +44 1214658851.
E-mail address: meera.roy@nhs.net (M. Roy).

0891-4222/$ – see front matter © 2013 Elsevier Ltd. All rights reserved.
http://dx.doi.org/10.1016/j.ridd.2013.12.004

1. Introduction

Aripiprazole (Abilify®, Bristol Myers Squibb) is an atypical antipsychotic and a quinolinone derivative. It is a partial agonist at dopamine D_2 and 5-HT_{1A} receptors and is an antagonist at 5-HT_2 receptors. It has been described as a dopamine system stabiliser as, in high levels of dopamine production, it will act as an antagonist and where dopamine activity is low, it will act as an agonist. This means that aripiprazole is able to modulate the degree of the blockade of these receptors. Aripiprazole also has strong affinity for D_3 receptors, moderate affinity for D_4, 5-HT_{2C}, 5-HT_7, alpha-1 adrenergic receptors, histamine H_1 receptors and serotonin reuptake transporter, with no appreciable affinity at the cholinergic muscarinic receptor. Aripiprazole has selective effects on the mesolimbic and frontal dopaminergic pathways. Selectively reducing dopamine synthesis in the ventral tegmental area is a possible therapeutic mechanism for the long-term efficacy of aripiprazole in controlling schizophrenia symptoms with minimum extrapyramidal adverse effects (Han, Huang, & Deng, 2009). Aripiprazole is licensed for treatment of schizophrenia, treatment and prevention of recurrence of mania and control of agitation and disturbed behaviour in schizophrenia in the UK. Additionally in the USA, it has been licensed by the food and drug administration (FDA) in 2002 for the treatment of irritability associated with autistic spectrum disorder (ASD). Aripiprazole remains unlicensed in the UK at present for the treatment of symptoms associated with intellectual disabilities (ID), developmental disabilities (DD), ASD and pervasive developmental disorder (PDD) such as problem (challenging) behaviour (PB).

Among psychotropic medications, atypical antipsychotics, particularly risperidone, are used most commonly to manage PB in people with ID, DD, ASD and PDD (see Deb, 2013 for a review). It has been reported that 20–45% of people with ID are on psychotropic medication and 14–30% are receiving medication to manage a PB such as aggression or self-injurious behaviour (SIB) in the absence of a diagnosed psychiatric disorder (Deb & Fraser, 1994). Almost two thirds of psychotropic medications prescribed to people with ID are antipsychotics (Deb, 2013).

This paper systematically reviews the evidence for the effectiveness of aripiprazole in the management of PB in people with ID, DD, ASD and PDD.

2. Methods

2.1. Search strategy

Electronic databases of journal articles, namely EMBASE, PsycINFO, MEDLINE and Cochrane were the primary focus of the search. In order to lessen bias due to language limitation all papers with an abstract in English were included even if the full text was in another language.

Broad search terms were used to describe ID, DD and ASD along with PB combined with aripiprazole (Abilify, Aripiprex) (see Appendix A). The search terms were adopted from the systematic reviews carried out to develop a national and an international guide for the use of psychotropic medications for the management of PB in adults with ID (Deb, Sohanpal, Soni, Unwin, & Lenôtre, 2007; Deb et al., 2009; Unwin & Deb, 2010, 2011). A specialist librarian also advised on the search terms.

2.2. Criteria for selecting studies for this review

A list of criteria was devised which the studies had to meet in order to merit inclusion. The criteria were adopted from similar systematic reviews on psychotropic medications that have been published recently by some of the co-authors of this paper (Deb et al., 2007; Unwin & Deb, 2011) (see Appendix A).