SUCCESSFUL USE OF RISPERIDONE IN AN ADULT WITH THE PERVERSIVE DEVELOPMENTAL DISORDER, ASPERGER'S SYNDROME: A CASE REPORT

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Introduction

Asperger’s syndrome (Autistic Spectrum Disorder) is classified as a Pervasive Developmental Disorder (PDD) (ICD-10, code F84). It mainly differs from autism in that there is no general delay or retardation in language or in cognitive development of the patient. The majority of those affected show normal general intelligence but it is common for them to be markedly clumsy. As in autism, there are qualitative deficiencies in reciprocal social interaction and restricted, repetitive, stereotyped patterns of behaviour, interests and activities. Males are significantly more affected than females (Ehlers and Gilberg, 1993).

Risperidone is a potent antagonist at dopamine D$_2$ and serotonin 5-HT$_2A$ receptors (Janssen et al., 1988) and clinical trials have shown its efficacy in controlling both the positive and negative symptoms of schizophrenia (Möller et al., 1991; Chouinard et al., 1993). Its use is associated with a low incidence of extrapyramidal side effects (Owens, 1994) and it produces significantly fewer extrapyramidal side reactions when compared with conventional neuroleptics such as haloperidol (Chouinard et al., 1993).

There is evidence of imbalances among the monoamine neurotransmitters, dopamine and serotonin, in PDD (Barthelemy et al., 1998) but findings vary partly as a result of the different tissue fluids assayed (Narayan et al., 1993). Whole blood serotonin levels were raised in 30% to 40% of children with autistic...
disorder (Anderson et al., 1987). The role of serotonin in perception, filtering sensory information, pain and motor functions, all of which may be impaired in autism, suggest its involvement in PDD (Young et al., 1982; Anderson, 1987). There were no differences in plasma homovanillic acid (a major dopamine metabolite) concentrations between autistic and control children (Minderaa et al., 1989) although levels of homovanillic acid in cerebrospinal fluid have been found to be higher in more severely impaired children with autistic disorder (Cohen et al., 1974, 1977).

For the reasons of a more favourable safety profile than conventional antipsychotics and antagonistic effects on the serotonergic and dopaminergic systems, risperidone has been widely used in Learning Disability settings to control apparent psychosis and behavioural disturbance.

There is a small but growing body of literature that seems to indicate risperidone may be beneficial in children and adults with PDD. Reports are mainly of case studies (Fisman and Steele, 1996; Hardan et al., 1996; McDougal et al., 1995a; McCartney and Calvert, 1999; Purdon et al., 1994; Sabaratnam et al., 1995) but also include a few trials with small numbers of subjects (Vanden Borre et al., 1993; McDougle et al., 1995b, 1997, 1998). This case study reports the effectiveness of risperidone in the treatment of a young man with Asperger’s syndrome specifically.

**Case Report**

The Learning Disabilities Service first saw Mr. H., a 30-year-old man with a long-standing history of antisocial behaviour, in 1993. He was diagnosed with borderline learning disability (full scale IQ 77, verbal IQ 74, performance IQ 89; recorded in 1995), Asperger’s Syndrome and a mixed anxiety-depressive state. He was single, had worked as a panel beater and car sprayer since the age of 16, and lived at home with his parents.

Mr. H. was the elder of three siblings. He was born by standard vaginal delivery at 42 weeks weighing 7lb 6oz although the delivery was induced as his mother had pre-eclampsia. He walked at 15 months, spoke his first words at one year and could construct a sentence by the age of 2.5 years. His mother commented that as a baby he never seemed to want cuddling or be held and, prior to the age of three, was neither interested in learning nor talking. Subsequent hearing tests were normal. As an infant, his mother also felt that he was slow to reach developmental milestones. His lack of responsiveness before the age of three supported the diagnosis of Asperger’s syndrome (WHO, 1992).

At school, Mr. H. was not so enquiring or active in learning as were other children in his class. However, there did not appear clinically to be any general delay in language or cognitive development. At the age of 10, he attended a Child Guidance Clinic because of his slow progress, was later placed in a remedial class and never achieved full literacy. Not until his 20’s did he confide that he had been sexually abused at 12 years old by a school teacher and by at least one other person. In retrospect, his mother considered this to be around the time that his temper tantrums and aggressive outbursts had begun.

When 23 years old, Mr. H. was involved in a road traffic accident while riding a bicycle. Following the accident, he had post-traumatic amnesia lasting about 72 hours and his forgetfulness, irritability and self-control deteriorated.
Results of a CT scan and EEG were unremarkable. Two years later, he smashed up his parents’ house and the flat where he was living in frustration at not getting his own way on one particular occasion.

Characteristic of Asperger’s Syndrome, Mr. H. had never been able to form social relationships. Impairment in reciprocal social interaction was apparent particularly in terms of inappropriate situational behaviour and poor use of social signals. He avoided eye contact and often did not know what to say. Impairment in communication was evident from his poor use of language skills and lack of creativity and fantasy. He was unable to settle or concentrate for any length of time. In addition, he exhibited restricted, repetitive, stereotyped patterns of behaviour, interests and activities; for example, his life - work, magazines and conversation - was dominated by cars.

In 1995, fluoxetine 20 mg was prescribed once daily but he never took this treatment and remained reluctant to try any other medication. Risperidone syrup 1 mg/ml daily was then prescribed in 1999 following problems in the relationship with his girlfriend, a death-threat and an attempted petrol bombing of his flat. At this time his mother confirmed that he had relationship problems and that the death threats and petrol bombing were real events and not delusions. She also reaffirmed his lack of imagination. Furthermore, his carers did not report evidence of psychosis, systematised delusions or fantasising and this was also apparent at interview.

Three months later it was discovered that Mr. H. had been taking only one-tenth of the prescribed dose (0.1 mg). Nevertheless, he reported that he was feeling calmer and less stressed. Unfortunately, his girlfriend then ended their relationship and subsequently at work he had a number of explosive outbursts of anger. Risperidone at 1 mg/ml daily was reaffirmed and he continued on this dose for over six months. Mr. H. made significant improvement. His mother noted that there was a reduction in the number of angry outbursts from two to three severe episodes of swearing and shouting a week to only one occurrence in the past two months. He no longer became so frustrated - where previously he would ‘storm off’ in anger, he was able to articulate that he was feeling upset and needed to withdraw. From being unable to concentrate, for example, on the television, he watched programmes with his family and regularly viewed one programme in particular. His social interaction also improved. He made more effort to be part of family discussions and to meet with friends. On one occasion he initiated, organised and worked as a disc jockey at a nightclub, something that he had never done before.

With such improvement, Mr. H. then decided to stop taking his treatment. Four months later at his out-patient appointment, there was evidence of increasingly hostile preoccupations. He stated that he was feeling angry and anxious, and that something happened at work every day to cause him to worry. On one occasion he had wanted to pick up a heavy object and hit his boss but, after thinking through the consequences, had decided against it. His mother confirmed that his anger had returned and that his overall behaviour was deteriorating.

Mr. H. was persuaded to recommence risperidone syrup 1 mg/ml daily and a positive response was seen within a week. His mother expressed relief that his
behaviour was again controlled and thought that this could only be due to the risperidone treatment.

He continues to take his medication and benefits from significant behavioural improvement. Generally his mood is cheerful and although he still has some depressive characteristics, these were more associated with his on-going social problems rather than with a depressive syndrome. Subjectively, he reported his improvement - ‘everything has been a muddle in my head – it’s not so much now’.

Discussion

The PDDs are chronic conditions impairing the quality of life of individuals that frequently require pharmacotherapy as part of their management. This case report confirms previous findings (Fisman and Steele, 1996; Hardan et al., 1996; McDougal et al., 1995a, 1995b, 1997, 1998; McCartney and Calvert, 1999; Purdon et al., 1994; Sabaratnam, 1995; Vanden Borre et al., 1993). Compliance was also helped by the absence of any untoward side effects. This was especially important in this patient as he had previously been reluctant to take any medication. It was disappointing that such improvement caused Mr. H. to assume that therapy was no longer necessary. However, this may occur with any medication.

Our findings are limited by the fact that this is only a single case report, the absence of standardised scales for assessing symptom changes and adverse effects, as well as by the lack of control patients. Our observations are also limited by the relatively short treatment period but it is comparable to the treatment period of some clinical trials and, although confounding factors cannot be excluded, there, nevertheless, appears to be a correlation between behavioural improvement and risperidone therapy. The promising findings in this subject taken alongside other positive case reports, and considering the widespread use of risperidone in the learning disabled population, would seem to indicate a need for a prospective study involving a randomised sample, controlled methodology and standardised measurements to evaluate the potential role of risperidone in PDD.
Summary

Improvement in the negative symptoms of schizophrenia including emotional and social withdrawal, poor rapport and stereotyped thinking, many of which are characteristic of developmental disorders, suggest a role for risperidone, an atypical antipsychotic, in the treatment of pervasive developmental disorders. Here we describe a 30-year-old man with Asperger’s syndrome. The observed improvement in social relations, reduced aggressive behaviour and diminished repetitive thinking of this patient with Asperger’s syndrome was confirmed by the patient. This case report confirms that risperidone has a role in PDD. Previous reports have only studied children with Asperger’s syndrome and we believe that our report is the first to show a role for risperidone in improvement of an adult with this condition.

References


