USE OF ATYPICAL ANTIPSYCHOTICS IN PEOPLE WITH INTELLECTUAL DISABILITY - IS IT ATYPICAL?

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Introduction

Pharmacological intervention in people with intellectual disability (ID) for their underlying mental illnesses and challenging behaviour has been fraught with difficulties due to a lack of robust evidence base (Brylewski and Duggan, 2003), lack of standardized diagnostic criteria, diagnostic overshadowing, problems with communication and a considerable overlap with co-morbid physical health problems (Bhaumik et al., 2005).

The presentation of mental illness in people with ID can be atypical, making a psychiatric diagnosis in people with moderate or severe ID difficult and may sometimes be missed or misdiagnosed. The presence of certain observable features can be used to diagnose conditions like depression and bipolar affective disorder. Presentations like aggression or behavioural problems could be a common symptom of mental illness in this group (RCPsych, 2001).

Challenging behaviour, a diagnosis often made in people with ID, may have multiple causes including underlying mental or physical health problem or pain, a maladaptive learned behaviour in the context of significant communication...
difficulties or a person’s reaction to environmental triggers.

The drug management of mental health problems in people with ID is based on the same principles as that of the general population. The management of challenging behaviour, on the other hand, should predominantly be that of managing the underlying cause (The Frith Prescribing Guidelines for Adults with Learning Disability 2005 p51, 59, Quick Reference Guide 2006 p8) where appropriate. Additional interventions including non-pharmacological approaches, behavioural and psychological therapies should be the mainstay of treatment in most patients. However, despite these interventions some individuals may not show any sustained improvement or may only show a partial response leaving the clinicians with no alternative but to use pharmacological interventions (Khan, 1997). Pharmacotherapy may be used in this situation to reduce the risks to self or others and to facilitate the engagement in other therapeutic approaches. However, in practice, other factors such as pressure from carers and lack of resources can also lead to the use of medications (Bhaumik and Michael, 2004).

Pharmacological intervention in challenging behaviour is controversial (Ashcroft et al., 2001). This is more so with the use of antipsychotics or mood stabilisers as there is no robust evidence base (Brylewski and Duggan, 2003). The only exception is the use of risperidone in low doses (Cohen et al., 1998; Deb et al., 2007; Horrigan and Barnhill, 1997; Khan, 1997; McDougle et al., 1999; Ryes et al., 2006; Williams et al., 2000; Zarcone et al., 2001). On the whole there are concerns about use of such drugs without appropriate monitoring and review (Kroese et al., 2001).

In the past, conventional antipsychotic drugs like haloperidol, chlorpromazine and thioridazine were frequently used to manage challenging behaviour (McGillivray et al., 2004) However with the advent of newer atypical antipsychotic drugs like olanzapine, risperidone, quetiapine, amisulpiride etc, their use has become more common (Expert Consensus Guideline Series, 2000, p206-209; McGillivray et al., 2006).

Studies have found that, at any given time, people with ID living in the community have a 1 in 4 chance of being maintained on antipsychotic medication (Branford, 1994; Branford, 1996; Clarke et al., 1990). Branford (1994) pointed out that there was an excessive and inappropriate use of antipsychotic drugs in people with ID living in residential or institutional settings. These findings are consistent with other studies carried out in the United States and UK (Aman and Singh 1989; Clarke et al., 1990). As a result, a national Guideline Development Group (GDG) was established to ensure an improvement in evidence based practice in these areas based on the principles as set out by NICE (Deb et al., 2006).

The widespread use of atypical antipsychotic drugs (AAPs) is a cause for concern in the context of their metabolic side effects and higher risk of cerebrovascular accidents (British National Formulary, 2007). There is a paucity of literature around the extent of use of AAPs in people with ID (Brylewski and Duggan, 2003) and services are largely unaware of the proportion of patients who are prescribed these drugs for unlicensed indications. However there have been some publications on use of AAPs, including a naturalistic study (Bokszsanska et al., 2003) and several double blind placebo controlled studies (McDougle et al., 1999; Ryes et al., 2006; Tyrer et al., 2008; Zarcone et al., 2001) and
in managing challenging behaviour (Deb et al., 2007; Grey et al., 2005; McGillivray et al., 2004; McGillivray et al., 2006).

This audit was undertaken to identify the extent of use of AAPs in adults with ID and also to improve clinical practice in this area given the concerns that have been highlighted above.

**Method**

The Leicestershire health district has a catchment population of approximately 1 million. The ID services are based at the Leicester Frith hospital, which comprises of a 70-bedded long stay unit (now closed), 10-bedded challenging behaviour unit for adults with Autistic Spectrum Disorders and severe challenging behaviour and 12-bedded assessment and treatment unit for people with ID and mental health problems. The rest of the service is largely community based and multidisciplinary in nature. This audit was carried out on people with ID living in Leicester, Leicestershire and Rutland accessing psychiatry services for adults with ID in the year 2000.

**Aims of the audit:**

1. To estimate the prevalence of AAPs prescribing in people with ID living in Leicester, Leicestershire and Rutland accessing psychiatry services for adults with ID.
2. To describe the main indications for the use of AAPs and the dosage used.
3. To identify any reported side effects.
4. To ascertain the concomitant use of other psychotropic and anti-epileptic medications.

**List of criteria and standards audited:**

- As it is a baseline audit, there were no established comparative standards.
- All case notes should have written indication, dosage, side-effects and reason for use of other psychotropic medications.

Among the one million populations in Leicester, Leicestershire and Rutland, more than 3400 people with ID and age over 20 are registered with the Leicestershire Learning Disability Register with a prevalence of about 4.9 per 1000 population of the same age group. (Leicestershire Learning Disability Register, 2007) and 983 adults with ID were in contact with the ID psychiatry service in the year 2000. All adults with ID on AAPs and active to the service in the year 2000 were included. A retrospective methodology using information from psychiatric case notes was used for this audit. Information was gathered using a structured form, which included socio-demographic details, ICD 10 diagnosis made by clinicians, type, dose and indications for use of AAPs including indications of use for specific behavioural problems, side effects reported and the concomitant use of other psychotropic and anti-epileptic medication.

**Results**

There were 983 (100%) patients who were in contact with the ID psychiatry service, and 185 (18.9%) patients were identified to be on one of the AAPs, mainly risperidone and olanzapine (TABLES I and II).

181 patients (18.4%) were on conventional antipsychotic drugs. In this group
majority were on chlorpromazine and haloperidol, 59/181 (32.6%), thioridazine 41/181 (22.7%), depot injection, 20 (11%) and remaining 61 (33.7%) on other conventional antipsychotic drugs. The audit was carried out on active cases in the year 2000 when a considerable percentage of patients were prescribed thioridazine which has since been withdrawn from the UK market.

AAPs were used in all age groups (including over 60 years), more in older age groups (TABLE II). There was no difference in the extent of the use of these drugs in relation to the degree of ID except in the case of risperidone. Low dose of risperidone was more frequently prescribed in the management of behaviour problems and in moderate to severe/profound ID groups (82% in moderate ID group and 98% in severe to profound ID group).

Those living in residential homes and under NHS care (124 out of 185 (67%)) were twice likely to be on AAPs than those living in the community (61 out of 185 (33%)). The excess use of AAPs in those living under residential and NHS care may reflect that they are more likely to suffer from mental illnesses and significant challenging behaviour. The demographic information showed more use of AAPs in male individuals 107 (58%) compared to that of in females 78 (42%) and this might
reflect, amongst other reasons, the excess of male population in people with ID. So far as prescribing trend is concerned, risperidone use is seen more in the male population 79 (59%) than in the female population 55 (41%). Olanzapine use was noted to be the same in both groups. The use of polypharmacy within this class of drugs was not evident, with the exception of one patient who was on risperidone and amisulpiride.

**Atypical antipsychotics used in mental illnesses**

56 (30.3%) patients were prescribed these drugs primarily for the treatment of mental illness and this included schizophrenia / schizoaffective disorder 39 (21%), psychoses, 14 (8%) and bipolar affective disorder 3 (1.8%).

All 5 AAPs available in the year 2000, (amisulpiride, clozapine, olanzapine, risperidone, quetiapine), were used, with olanzapine and risperidone being the two most common choices in treating mental illnesses (TABLE III).

**Atypical antipsychotics used in challenging behaviour**

The most common type of challenging behaviour was aggression, which was present in 74 out of 129 (57.4%) patients who were on AAPs, two thirds of them were male with moderate to severe degree of ID, 2 (1.55%) cases with dementia and challenging behaviour were noted to be in males. Other behaviours include 15 (11.6%) self-injurious behaviour, 8 (6.2%) sexually inappropriate behaviour, 16 (12.4%) stereotypy, 12 (9.3%) agitation and 4 (3.1%) anxiety / hyperactivity. Self injurious behaviour was more frequent in females, 10/15 (66.7%) and more likely in individuals with moderate and severe degree of ID (FIGURES I and II, TABLE IV).

In people with ID and challenging behaviour, 42 (32.6%) had no identifiable mental illness, 41 (31.8%) had associated autistic spectrum disorder, 31 (24%) had affective disorder, 7 (5.4%) had personality disorder, 6 (4.65%) had anxiety and the remaining 2 (1.6%) had dementia (TABLE IV).

AAPs were prescribed for a range

<table>
<thead>
<tr>
<th>Indication</th>
<th>Atypical Antipsychotic Medication No. of patients (%)</th>
<th>Total No. (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Amisulpiride</td>
<td>Clozapine</td>
</tr>
<tr>
<td>Schizophrenia / Schizoaffective disorder / Psychotic disorder</td>
<td>6 (3.2)</td>
<td>2 (1.1)</td>
</tr>
<tr>
<td>Mania</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Challenging behaviour</td>
<td>2 (1.1)</td>
<td>1 (0.5)</td>
</tr>
<tr>
<td>Total</td>
<td>8 (4.3)</td>
<td>3 (1.6)</td>
</tr>
</tbody>
</table>
### TABLE IV
Challenging behaviour and associated mental illness

<table>
<thead>
<tr>
<th>Mental Illness</th>
<th>Challenging Behaviour</th>
<th>No. of patients (%)</th>
<th>Total No. (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Aggression</td>
<td>Self injurious</td>
<td>Sexually</td>
</tr>
<tr>
<td></td>
<td></td>
<td>behaviour</td>
<td>inappropriate</td>
</tr>
<tr>
<td>No Mental Illness</td>
<td>27 (20.9)</td>
<td>3 (2.3)</td>
<td>2 (1.6)</td>
</tr>
<tr>
<td>Autistic Spectrum Disorder</td>
<td>23 (17.8)</td>
<td>5 (3.9)</td>
<td>3 (2.3)</td>
</tr>
<tr>
<td>Personality Disorder</td>
<td>4 (3.1)</td>
<td>1 (0.8)</td>
<td>1 (0.8)</td>
</tr>
<tr>
<td>Affective Disorder</td>
<td>17 (13.2)</td>
<td>4 (3.1)</td>
<td>2 (1.6)</td>
</tr>
<tr>
<td>Dementia</td>
<td>1 (0.8)</td>
<td>1 (0.8)</td>
<td>0</td>
</tr>
<tr>
<td>Anxiety/hyperactivity</td>
<td>2 (1.6)</td>
<td>1 (0.8)</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>74 (57.4)</td>
<td>15 (11.6)</td>
<td>8 (6.2)</td>
</tr>
</tbody>
</table>

### TABLE V
Atypical antipsychotics used in challenging behaviour

<table>
<thead>
<tr>
<th>Atypical Antipsychotic</th>
<th>Challenging Behaviour</th>
<th>No. of patients (%)</th>
<th>Total No. (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Aggression</td>
<td>Self injurious</td>
<td>Sexually</td>
</tr>
<tr>
<td></td>
<td></td>
<td>behaviour</td>
<td>inappropriate</td>
</tr>
<tr>
<td>Amisulpride</td>
<td>1 (0.8)</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Clozapine</td>
<td>1 (0.8)</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Olanzapine</td>
<td>8 (6.2)</td>
<td>2 (1.5)</td>
<td>0</td>
</tr>
<tr>
<td>Quetiapine</td>
<td>1 (0.8)</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Risperidone</td>
<td>63 (48.8)</td>
<td>13 (10.1)</td>
<td>8 (6.2)</td>
</tr>
<tr>
<td>Total</td>
<td>74 (57.4)</td>
<td>15 (11.6)</td>
<td>8 (6.2)</td>
</tr>
</tbody>
</table>
FIGURE 1
Behavioural problem and gender

![Bar chart showing frequency of various behavioural problems by gender.]

FIGURE 2
Degree of intellectual disability and behavioural problems

![Bar chart showing frequency of various behavioural problems by degree of intellectual disability.]
of behaviour problems in 129 (69.7%) patients. The prescribing trend was that low dose risperidone (0.5 to 2 mg) was the most frequently used (113 patients out of the 129 (87.6%). Olanzapine use was much less, 12 /129 (9.3%). It was noted that one patient was on clozapine for challenging behaviour (TABLE V).

Aggression, 23/41 (56%) was the major challenging behaviour in people with autistic spectrum disorder and 10/41 (24.4%) presented with stereotypy (TABLE IV). 38 out of 41 (92.7%) with autistic spectrum disorder and challenging behaviour were prescribed risperidone, 2 were on olanzapine and 1 on amisulpiride.

**Side effects**

The majority of patients, 129 (69.7%) did not report any side effects. The side effects reported include extra-pyramidal side effects and weight gain. Side effects with risperidone were mainly at the higher dose range and were not different from those observed in the general population. Raised blood sugar was reported in one patient on olanzapine.

The majority of patients included in this audit did not have any screening for metabolic syndrome as in the year 2000 there was no protocol for monitoring metabolic syndrome within the trust.

**Use of concomitant psychotropic medication and antiepileptic drugs**

144 (77.8%) patients were on other concomitant medication such as conventional antipsychotics 45 (24.3%), anticholinergic drugs 36 (19.4%), antidepressants 50 (27%), mood stabilisers 15 (8%), antiepileptic drugs 54 (29.2%) and anxiolytics and hypnotics 46 (24.9%). It must be noted that these groups were not exclusive and that some patients were on more than one concomitant medication.

**Discussion**

This audit highlights extensive use of AAPs in this group of patients living in the community (18.9%). The majority were prescribed these drugs for the management of behavioural problems (69.7%) and this certainly raises concerns about this practice especially when there is a lack of research evidence base in this area with the exception of risperidone (Deb et al., 2007; Horrigan and Barnhill., 1997; McDougle et al., 1998; Reyes et al., 2006; Tyrer et al., 2008; Zarcone et al., 2001). Use of these drugs for treating mental illness was similar to that in general population in the dosage used, indications for use and tolerance of these drugs.

The prescribing trend in our audit was similar to other study findings in some aspects, i.e. greater use of antipsychotics in over 30 years of age group, more males (58%) and fewer females (42%) were on AAPs, and more females over the age of 50 were receiving AAPs. However in our findings fewer males under age 30 years group were receiving AAPs and this was different from the Australian study findings, (TABLE II, McGillivray and McCabe, 2004; McGillivray and McCabe, 2006).

It appears that the majority in this audit sample with challenging behaviour were treated with risperidone, 113/185 (61% of study population) at a dose range of 0.5 - 2mg daily. The use of risperidone in 38 out of 41 individuals (92.7%) with autistic spectrum disorder stresses the
usefulness of this drug in people with autistic spectrum disorder and problem behaviours. What it does not answer, however, is the question of whether appropriate non-pharmacological measures such as communication strategies, psychological therapies, structure and support have been tried in these individuals to avoid or minimise the use of medications.

Other drugs in this class used for challenging behaviour include olanzapine 12/129 (9.3%), amisulpride 2 (1.5%) and quetiapine 1 (0.8%) in that order, despite the fact that these drugs have no firm evidence base in the management of challenging behaviour except for risperidone as discussed earlier. The authors, however, did not explore the background history to find out whether these individuals had been tried on non-pharmacological measures before considering medications and whether risperidone had been tried before and the outcome of its use. These drugs have also been used to manage behaviour problems associated with dementia despite the increased risk of cerebrovascular accidents (British National Formulary, 2007). In one patient with borderline personality disorder, clozapine 1 (0.8%) had been used with good effects.

Our findings suggest that people with ID are also able to tolerate AAPs in a similar way as in the general population since the reported side effects were not significantly higher than that in people without ID. However one should exercise caution in jumping to this assumption as the low prevalence of side effects could be the result of the inability to communicate any side effects experienced rather than a better tolerability. The most commonly reported side effects were weight gain, extrapyramidal side effects and drowsiness. Occasionally, other drugs such as procyclidine had been prescribed to counteract the side effects of AAPs. We felt that this approach defeated the purpose of prescribing AAPs for obvious reasons. The audit findings indicate that routine investigations to detect metabolic syndrome and the monitoring of weight in this population at the time of audit were poor.

**Strengths and Limitations**

The strength of this audit lies with the fact that it established the baseline data on which the clinicians could improve their practice by monitoring the use of AAPs in this vulnerable population. The audit also highlights that these drugs should be used in the same way as in the general population for treatment of mental illness as suggested by NICE guidance.

This audit had significant limitations as it was based on retrospective data and did not measure the outcomes of drug treatment including users’ and carers’ perception of the treatment. In addition, the audit did not capture the data on other non-pharmacological intervention, which might have been undertaken at the same time, e.g. psychological therapies, speech and language therapies.

**Conclusion**

Future re-audit will be needed in this area with clearly established standards and incorporating outcome measures and use of non-pharmacological measures.
References


