

# Problems associated with the diagnosis and the prescribing of anti-psychotic medication in children and adolescents for psychiatric conditions, by non-psychiatric specialists

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## Abstract

**Aim:** The objective of this study is to assess the accuracy of the diagnosis and appropriateness of antipsychotic medication prescribed to children and adolescents referred to child guidance clinic, and how many of these remained on the said medication after consultant psychiatrist and multidisciplinary team review.

**Method:** A retrospective case notes review of all the children referred to a child guidance clinic in the period June 2005 to July 2006 were analysed, looking specifically at the referral tickets, the treatment on first interview with a member of the multidisciplinary team at the clinic, the working diagnosis of the team, and the management plan after at least six months of follow up at child guidance clinic. There was very good inter-rater reliability between the two observers looking at the case notes.

**Results:** One hundred and fifty four (63.1%) out of a total of 244 children who were referred carried an admission diagnosis, which differed from the working diagnosis after 6 months. A total of 66 children (27%) were started on various types of psychiatric treatment prior to referral. Thirty (45.5%) of these were prescribed sulpiride, an atypical neuroleptic. Following review by the multi-disciplinary team, the medication of 25 (83.3%) of these children was terminated or altered.

**Conclusion:** This report highlights the need of consultation-liaison with general practitioners and also Continued Medical Education courses for general practice management in child and adolescent psychiatry. It is advisable that non psychiatric specialists limit the use of antipsychotic medication to children and adolescents without expert advice and in addition, should refer all such children with urgency.

## Keywords

Sulpiride, children, adolescents, psychiatry

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## Introduction

The practice of child psychiatry differs from that of adults in a number of ways. Children seldom realise they have a problem. Their problems may reflect those of the family, the child's stage of development and their lack of ability to express themselves. Treatment used in child psychiatry also differs from that of adults; oral medication is less used when dealing with children.

General Practitioners (GPs) will frequently be the initial source of assistance for patients with acute psychiatric illnesses and their families.<sup>1</sup> The most common psychiatric complaints seen by the GP are for somatic complaints (50% of cases). Other reasons include depressive episodes, dysthymia, adjustment disorder, anxiety disorder and obsessive-compulsive disorder.<sup>2</sup> It is essential that GPs take medical history, examination, investigations and risk assessment before referring patients. The referral should be specific.<sup>3</sup> Approximately 70% of depression disorders in children were not diagnosed during consultation with GPs.<sup>2</sup>

Studies reveal that antipsychotic medications are being commonly and extensively prescribed to children and adolescents, despite the relative limited scientific evidence to support their paediatric use.<sup>4</sup>

The most convincing evidence of the efficacy of the atypical neuroleptics in children and adolescents is in the treatment of schizophrenia, and pervasive developmental disorders. Other efficacious uses of atypical neuroleptics have been reported in the treatment of tic disorders (including Tourette's syndrome) and bipolar disorders.<sup>5</sup> The most frequently prescribed atypical agents are risperidone, quetiapine and aripiprazole in children with the most common age group being above 9 years of age.<sup>4</sup> Risperidone is an atypical antipsychotic that is generally well tolerated and numerous studies have been published investigating this drug in children.<sup>6</sup> A study on Sulpiride reported that due to its action on the dopaminergic, serotonergic and opiategic neurotransmitter systems it clearly reduces self-injurious behaviour in autistic children.<sup>7</sup>

The aim of this study was to assess the accuracy of the diagnosis for which children and adolescents were referred to the Child Guidance Clinic by non psychiatric specialists over a period of one year. Also to assess the reason for non psychiatric specialists to prescribe antipsychotic medication in this age group.

## Methodology

All the children referred to Child Guidance Clinic (CGC) at St Luke's Hospital (SLH), Malta, between the period June 2005 and July 2006 were included in this retrospective cross-sectional analysis. The total sample included 244 children aged between 2 and 16 years. The inclusion criteria, for this study makes the sample truly representative of the child guidance clinic population, thus reducing any selection bias. No exclusion criteria were used in this study.

Analysis included reviewing medical records of all children and adolescents referred within that year together with the referring agent (GPs, paediatricians and consultant psychiatrists). Each of the case notes was reviewed by two individuals so as to reduce interviewer bias. Good inter-rater reliability existed between both observers. Almost all data collected by the observers was similar, any differences were accounted for by together returning to the case notes and correcting the discrepancy. Measures were taken while reviewing the case notes to comply with the Data Protection Act. The initial reason for referral was compared to the diagnosis made by the multi-disciplinary team, this, being later finalised by the consultant psychiatrist. Diagnosis was made according to the International Classification of mental and behavioural disorders (WHO, 1992) using its six axes system.

The study also assessed the percentage of children previously referred on treatment as opposed to those on none. The study confines itself to assess the number of children referred on antipsychotic treatment, the prescriber and the reason for commencing treatment. Emergent results were compared to the final diagnosis and management, after a six-month period. All changes in diagnosis were listed as misdiagnoses, and all changes in treatment were charted.

## Statistical methods

All data was inputted into Microsoft Excel and then analysed using an online Fisher's Exact & Chi-squared test calculator.<sup>8</sup> Descriptive statistics were also compiled in the form of tables.

## Results

Two hundred and forty four children met the inclusion criteria. One hundred and sixty three were males (66.8%) and 81 were females (33.1%) with a mean age of  $9.3 \pm 3.5$  years, (ranging from 2 to 16 years). The ages were further subdivided into three groups. The first group of children ( $n=38$ ) fell into the 5 years and under age bracket. This age group was chosen since most diagnoses cannot be made before the age of 5 in child psychiatry; also, the earlier the onset of initiating antipsychotic treatment, the greater the risks of side effects. In the second age group, 6 to 10 year olds, 118 children were included. Eighty eight children aged between 11 and 16 formed the last age group.

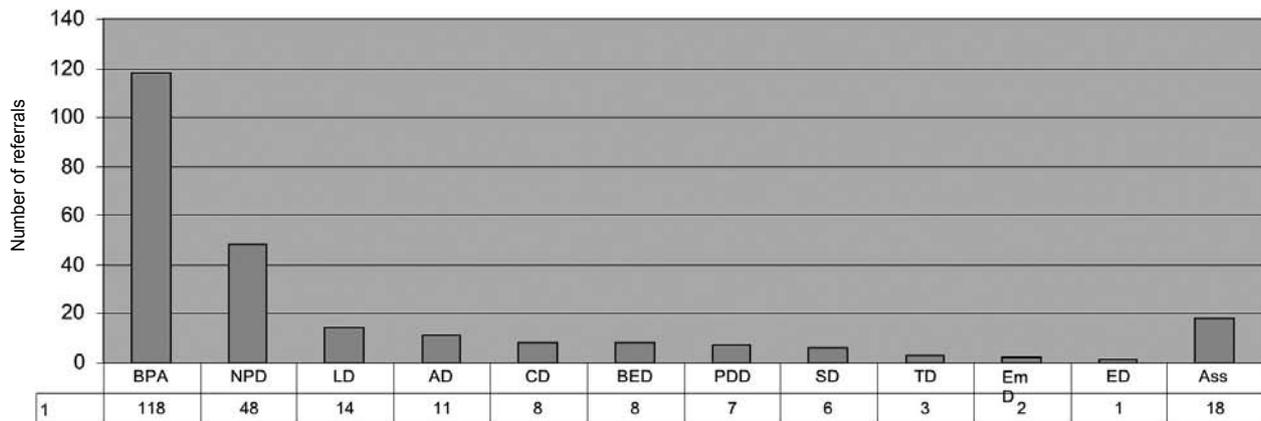
Referrals for this study were as follows; the greatest number of children (187 in all) was referred by family practitioners; 48 were referred by paediatricians; and 9 by consultant psychiatrists. The reason for referral to Child Guidance Clinic can be viewed in Figure 1.

BPA – behavioural problems and aggression; NPD – neurotic and psychosomatic disorders; LD – learning difficulties; AD – affective disorders; CD – conduct disorders; BED – other disorders of behaviour and emotion; PDD – pervasive developmental disorders; SD – sleep disorders; TD – tic disorder; EmD – emotional disorders; ED – eating disorders; Ass – Assessment.

It was observed that of a total of 244 children referred to CGC, 154 (63.1%) were misdiagnosed by the referring doctor when compared to the final diagnosis. The most frequently diagnosed mental and behavioural disorders by consultant psychiatrists were neurosis and stress related disorders ( $n=55$ ) and of these 81.8 % were misdiagnosed by non psychiatric specialists. Of the 46 diagnosed by psychiatrist specialists with diverse conduct disorders, 69.6% were misdiagnosed. Forty four were diagnosed by psychiatrists with attention deficit and hyperactivity disorder, and 47.7% of these were misdiagnosed by other referring doctors. Other various psychiatric illnesses were observed in the referred children, however in smaller percentages.

A total of 66 (27%) children were prescribed various types of psychiatric treatment, prior to referral. The main reason for being referred to this clinic, in these cases, was failure to respond to the previously prescribed medication. As indicated in the ticket of referral, a number of these children were tried on more than one type of medication before being referred for further assessment. Table 1 illustrates the distribution of children referred on treatment and how many were discontinued. Of the children prescribed with medication the most popular form of treatment used was sulpiride (an antipsychotic). This totalled 30 children (45.5%).

**Figure 1: Reasons for referrals to Child Guidance Clinic**



BPA – behavioural problems and aggression; NPD – neurotic and psychosomatic disorders; LD – learning difficulties; AD – affective disorders; CD – conduct disorders; BED – other disorders of behaviour and emotion; PDD – pervasive developmental disorders; SD – sleep disorders; TD – tic disorder; EmD – emotional disorders; ED – eating disorders; Ass – Assessment

Since sulpiride was the most commonly prescribed medication started by non-psychiatrist specialists, further investigations into the reasons for the choice of such medication and the outcome of this form of management were considered necessary. Of the 30 children who were started on sulpiride, the majority were referred by GPs ( $n=24$ ), paediatricians ( $n=9$ ), and one child by a consultant psychiatrist, (refer to tables 2a and 2b). Whether patients were previously referred on sulpiride or not did not vary significantly in relation to referral source ( $p=0.846$ ). This subgroup of 30 youngsters constituted 11 females and 19 males. No significant difference by gender was noted between the two groups ( $p=0.706$ ).

Table 3 shows in-depth analysis of the reason for starting the patient on sulpiride. Investigating children’s improvement in their diagnosed mental and behavioural disorders after a 6 month period, results show that only 5 remained on the same medication (sulpiride), as was started prior to referral. 4 children were diagnosed by the child psychiatrist as suffering from a form of conduct disorder and one child from ADHD.

The diagnosis of mental illness and behavioural disorders of such children, as given at the Child Guidance Clinic outlined in Table 3. Follow-up management after six months of the 25 children who were no longer left on sulpiride indicated in Table 4.

## Discussion

In children and adolescents, psychotropic medication should be started by a consultant psychiatrist for two main reasons; the first being that treatment is started following assessment and diagnosis made by a multi disciplinary team. The other reason is that the same medication used in general adult psychiatry may have a different use in children or may not even be licensed for

use in children.<sup>9</sup> The use of atypical antipsychotics by consultant psychiatrists should be critically assessed and compared with the benefits achieved by psychosocial interventions. It should not be resorted to as a first line treatment but used only in resistant cases. The pros and cons of using psychiatric medication should be well evaluated prior to its commencement.<sup>10</sup> In this study the reason for four children being left on sulpiride by the psychiatrist for conduct disorders, was because they were not responsive to other oral medication as well as psychotherapy. Sulpiride was prescribed as these patients were of danger to themselves or others. Following a risk assessment it was considered of greater harm had they not been started on antipsychotic medication.

**Table 1: Treatment on referral**

Treatment on referral	n	Treatment discontinued	
		Frequency	(%)
Sulpiride	30	25	83.3
Other Antipsychotics (Including Risperdone)	6	6	100.0
Propranolol	1	1	100.0
Antidepressants (Including TCAs + SSRI)	15	13	86.7
Antihistaminics	6	6	100.0
Anticonvulsants	5	2	40.0
Anxiolytics	3	3	100.0
<b>Totals</b>	<b>66</b>	<b>56</b>	<b>84.8</b>

**Table 2a: Referred by GPs (p= 0.4802)**

<b>Age</b>	<b>2-5 yrs</b>	<b>%</b>	<b>6-10 yrs</b>	<b>%</b>	<b>11-16 yrs</b>	<b>%</b>	<b>n</b>	<b>%</b>
Sulpiride	5	19.2	14	53.8	7	26.9	<b>26</b>	100
Other Rx or Nil	30	18.6	69	42.9	62	38.5	<b>161</b>	100
<b>Totals</b>	<b>35</b>		<b>83</b>		<b>69</b>		<b>187</b>	

**Table 2b: Referred by Paediatricians (p= 0.3761)**

<b>Age</b>	<b>2-5 yrs</b>	<b>%</b>	<b>6-10 yrs</b>	<b>%</b>	<b>11-16 yrs</b>	<b>%</b>	<b>n</b>	<b>%</b>
Sulpiride	0	0	2	40	3	60	<b>5</b>	100
Other Rx or Nil	8	18.6	21	48.8	14	32.6	<b>43</b>	100
<b>Totals</b>	<b>8</b>		<b>23</b>		<b>17</b>		<b>48</b>	

From the above results, according to the referral tickets a high percentage of children were misdiagnosed, and if correctly diagnosed were started on antipsychotic medication for the wrong indications. This situation would improve if consultant-liaison with the GP would be made accessible. By providing advice over the phone in urgent cases, and with GPs, a one-off assessment by the psychiatrist could then result in feedback to the GP for regular monitoring.<sup>11</sup> In Australia consultation liaison services were offered by psychiatrists. This resulted in both GPs and psychiatrists expressing a high rate of satisfaction with this mode of service. GPs also reported an increase in knowledge and confidence in dealing with psychiatric patients.<sup>11</sup>

Prior to referral a thorough history and examination by the GP with a specific reason for referral would facilitate prioritisation and insight of the cases seen at CGC. The authors of this study also recommend Continued Medical Education courses for general practitioners in child and adolescent psychiatry as a means of further improving the standard of community care offered in this age range.

Good quality collaboration between GPs and other professionals is essential. Almost all GPs (95%) had positive experiences when co-operating with different professionals, but only 47% felt that they had good contact with a child psychiatrist. This poses a challenge for both primary and secondary care

**Table 3: The sulpiride group: reason for referral and final diagnosis at CGC**

<b>Reason why sulpiride was started by the non specialist</b>	<b>n</b>	<b>Diagnosis given by multi-disciplinary team after at least 6 months of follow up</b>	<b>n</b>
ADHD	8	ADHD	5
Psychosomatisation disorders	4	Somatoform disorders	3
Conduct disorders	9	Conduct disorders	7
Affective disorder	2	Affective disorders	0
School phobia	2	Separation anxiety	3
Learning difficulties	1	Dev dis. Of Speech and language	1
Autism	1	Pervasive dev. Disorders (autism)	2
Tics	1	Tic disorders	1
Neurotic and stress related disorder	1	Neurosis and stress related disorders	6
Blank	1	Under evaluation	2
<b>Total</b>	<b>30</b>	<b>Total</b>	<b>30</b>

level doctors.<sup>12</sup> The GPs' attitudes toward psychotic disorders and their treatment in the primary health care system resulted in only 27% of GPs seeking structured and advanced education about psychiatry.<sup>13</sup>

Atypical antipsychotic medication was prescribed as treatment for children prior to admission to CGC. In all cases but one, the antipsychotic started by the consultant psychiatrist was the newer atypical antipsychotic risperidone. Interestingly in all referrals from non-psychiatrists the antipsychotic prescribed was sulpiride. Sulpiride is a selective dopamine D2 antagonist with antipsychotic and antidepressant activity.

As reviewed in the results, sulpiride was started for the wrong reason in most cases and therefore the children made little or no clinical improvement.

The misuse of sulpiride by the primary level care doctors is of concern considering that this is an antipsychotic with a number of long term and short-term side effects. The use of sulpiride is not indicated in children under 14 years of age.<sup>14</sup> Pooled data obtained from published studies emphasise hyperprolactinaemia as being one of the disturbing side effects.<sup>15</sup> Few studies report the adverse effects of prolonged prolactin elevation in children, including: stunted growth, delayed sexual development<sup>16</sup> galactorrhoea<sup>17</sup>, gynaecomastia, weight gain and osteoporosis.<sup>18</sup> One particular study reported a ten-fold increase in serum prolactin levels above the baseline level after one month of treatment.

Patients reported tardive motor and phonic tics induced by sulpiride following prolonged treatment<sup>19</sup>. The development of tardive dyskinesia following long-term treatment with sulpiride has been reported.<sup>20</sup> In controlled studies the incidence of extrapyramidal effects has been as high as 30%.

Liver and renal function tests should be performed every six months to a year in patients on sulpiride, including a physical examination looking out for signs and symptoms of extra pyramidal symptoms, which the patients should be informed about prior to commencement of treatment.

### Limitations and strengths of study

Some of the limitations in this study include; data being collected retrospectively and that it was solely collected from medical files without actually interviewing the children. Consequently, all information is based on written data; hence, there is no detail available about the duration of sulpiride treatment to the child. No contact with the referring GP was made to acquire any missing data. The study suffers from a Berkson's bias in that the sample population is truly representative of the patients who attended CGC but not of the target population as a whole. Due a lack of resources the observers carrying out this study were not blinded, thus emerges an observer bias in the data collection and write up of results.

The strengths of this study include; all case notes of children referred in the specified time frame were included in the study and this study is independent from pharmaceutical industry sponsorship.

**Table 4:** Management plan as decided by the multidisciplinary team after 6 months of follow up at CGC

<b>Management</b>	<b>n</b>	<b>%</b>
No medication	7	28
Psychotherapy	6	24
Methylphenidate	3	12
Antihistaminics	2	8
Amitriptyline	2	8
Clomipramine	2	8
St. John's Wort	1	4
Speech therapy	1	4
Antipsychotic	1	4
<b>Total</b>	<b>25</b>	<b>100</b>

Emergent results put forward an issue that should act as an eye-opener for the targeted audience; that regarding the number of unrecorded children on sulpiride within the community. In the light of such a concern, an immediate need for consultation - liaison with general practitioners and also continued medical education courses for general practice management in children and adolescent psychiatry is highly recommended. A well structured and tightly knit professional relationship between consultant psychiatrist and non psychiatric specialists would help to facilitate urgent referrals to the Child Guidance Clinic. Regular letters of correspondence with details of the assessment and management plan would increase collaboration between both sides; as a result the standard of clinical care for children and adolescents should improve.

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