

Received: 3.4.2010
Accepted: 6.9.2010

Attention Deficit Hyperactivity Disorder (ADHD) and Conduct Disorder in Children of Drug Dependent Parents

Nooshin Parvareh MD*, Hassan Ziaaddini MD**,
Ali Kheradmand MD***, Hamidreza Bayati MD****

* Assistant Professor, Department of Psychiatry, Kerman Neuroscience Research Center and School of Medicine, Kerman University of Medical Sciences, Kerman, Iran.

** Associate Professor, Department of Psychiatry, Kerman Neuroscience Research Center, School of Medicine, Kerman University of Medical Sciences, Kerman, Iran.

*** Psychiatrist, Kerman Neuroscience Research Center, School of Medicine, Kerman University of Medical Sciences, Kerman, Iran.

****Psychiatrist, School of Medicine, Birjand University of Medical Sciences, Khorasan Shomali, Iran.

Background:	Abstract Attention deficit hyperactivity disorder and conduct disorder are among relatively prevalent disorders during childhood and adolescence. Considering the negative impact of the parents' drug dependency and bipolar disorder, the present study aimed to determine the prevalence of ADHD and conduct disorder in children of drug-dependent and bipolar parents.
Methods:	In this case-control study, the case group included two groups of patients with drug dependency and bipolar disorder hospitalized in Shahid Beheshti hospital in Kerman who had 7 to 11-year-old children. The control group included healthy individuals without any drug dependency or other psychiatric disorders. Data were collected using Rutter scale Form A (parents' form) and a demographic questionnaire. Data were analyzed with ANOVA, Chi-square and Tamhane's post-hoc test.
Findings:	Rutter's abnormal scores were generally 7.11% in children of drug dependent parents, 14% in children of bipolar parents and 1.6% in children of healthy parents demonstrating no significant difference. The frequency of conduct disorder in the bipolar and drug dependent group was higher than the healthy group, but the difference was not significant. The frequency of ADHD was 8.9% in the drug dependency group and 1% in the control group which shows a significant difference.
Conclusion:	Drug dependency in parents may be a leading factor to mental disorders such as ADHD and conduct disorder in children.
Key words:	ADHD, Conduct disorder, Drug dependency.

Page count:	6
Tables:	2
Figures:	0
References:	14
Address of Correspondence:	Ali Kheradmand MD, Psychiatrist, Kerman Neuroscience Research Center, School of Medicine, Kerman University of Medical Sciences, Kerman, Iran. Email: dr.alikheradmand@yahoo.com

Introduction

ADHD is a sustainable pattern of inattention, hyperactivity and impulsive behavior, which can have harmful consequences for the patients' social life. It was called childhood hyper-kinetic reaction before. It is estimated that 3 to 5 percent of children show the symptoms in primary school.¹

In addition to the role of genetic factors in the incidence of this mental disorder, family imbalance and other anxiety factors play a role in the continuity of the disorder.²

Conduct disorder with a prevalence of 1 to 10 percent is a prevalent disorder in primary schools, similar to ADHD. It is 4 to 12 times more frequent among boys compared with girls.

Children with mixed ADHD have more risk factors compared with controls and children with ADHD inattentive type and also their families have more adversity compared with families of ADHD, inattentive type children and control.³

Conduct disorder is a stable set of behaviors characterized by aggression and violating other's rights. It is associated with many other disorders including ADHD and is also related to several mental and social factors such as harsh parenting, family problems and lack of parental supervision. Many parents of children with conduct disorders have serious mental problems. In addition, the increased prevalence of drug abuse and dependency has a role in the incidence of conduct disorder.² Piffiner et al reported that the association of conduct disorder and ADHD is significantly related to lack of family supervision, negative and non-effective behavior and the father's antisocial personality.⁴

Studies have shown that 51% of children with bipolar parents have psychiatric disorders and most of them have MDD, ADHD and behavioral disorders.⁵ Moreover, other studies have reported a 13% prevalence of ADHD in children of drug-dependent parents and a 8% prevalence in cocaine dependent parents.⁶

Children with ADHD, which is commonly associated with conduct disorder, causes dysfunction in the family and parent-child relationship, and reduces the effective role of parents, increases the stress level and other psychiatric problems in the family.⁷ On the other hand, children with ADHD in a four-year follow-up showed development of BMD if they had a family history of this disorder.² Considering the negative impact of parents' drug dependency and

bipolar disorder, the present study aimed to determine the prevalence of ADHD and conduct disorder in children of parents with drug dependency or bipolar disorder.

Methods

In this case-control study, the case group consisted of patients with drug dependency and bipolar disorder hospitalized in Shahid Beheshti Hospital in Kerman who had children in the age range of 7 to 11 years. The controls consisted of healthy individuals with no drug dependency or any psychiatric disorder who had children in the same age range. The sample size was about 100 in three groups of parents with bipolar disorder, parents with drug dependency and the control group, considering $\alpha = 5\%$ and the standard deviation of conduct disorder and ADHD scores, which was 1.250 in previous studies and $d=0.16$. The sample selection continued as far as possible to make an equal number of boys and girls including in each group.

Exclusion criteria were mental retardation in either parents or children, neurological and chronic somatic diseases. Furthermore, in the drug dependency group, patients with BMD, in the BMD group patients with drug dependency and in the control group patients with either drug dependency or BMD were excluded. Diagnosis of drug dependency and bipolar disorder was based on DSM-IV-TR which was carried out by two psychiatrists and a psychiatric assistant. Data were collected using Rutter's scale for assessing behavioral problems Form A (parents' form) and a demographic questionnaire.

Reliability and validity of this questionnaire has been investigated in Iran.⁸ This questionnaire includes 31 components including health related issues, habits, and 18 statements, which have three levels of answers of "not correct", "correct to some extent" and "completely correct" and the scores for them are zero, one and two, respectively. The maximum total score for this questionnaire is 62 and the total score of 13 or higher is the cut off point showing behavioral disorder.

Diagnosis in this questionnaire includes conduct disorder, emotional disorder, non-distinctive and normal. A Rutter score of higher than 13, but equal scores of conduct disorder and emotional disorder is called non-distinctive disorder.

Data were analyzed with ANOVA, Chi-square and Tamhane's post-hoc test. SPSS_{11.5} was used for this purpose.

Results

Abnormal Rutter scores was generally 11.7%, 14% and 6.1% in children of drug dependent parents, bipolar parents and healthy parents, respectively and there was no significant difference between them. The frequency of hyperactivity disorder, conduct disorder and emotional disorder in children is presented in Table 1. There was no significant difference between conduct disorder and ADHD in girls and boys of each group. Table 2 shows the frequency of hyperactivity and conduct disorders in bipolar, drug dependent and healthy parents considering mothers' smoking during pregnancy. There was no significant correlations between smoking during pregnancy and the frequency of ADHD and conduct disorder in any of the groups. According to the results, the mean of hyperactivity raw scores in bipolar and drug dependency groups were significantly different

from those of healthy groups ($P = 0.001$ and $P = 0.006$, respectively), but there was no significant difference between the bipolar and drug dependent groups in this regard.

Regarding the frequency of conduct disorder between children of the three groups, no significant difference was seen. However, in the bipolar and drug dependent groups, the frequency of conduct disorder was higher than the healthy group.

In this study, the frequency and percentage of children with conduct disorder and hyperactivity disorder in all three groups was investigated based on gender and no significant difference was seen. However, the frequency of these two disorders was obviously higher in boys than girls. There was no significant difference between the conduct disorder in children with smoking mothers during pregnancy in the two bipolar and drug dependency groups. There was also no significant difference between children with ADHD considering smoking during pregnancy in the two groups of bipolar and drug dependent parents.

Table 1. Frequency of conduct disorder, hyperactivity and emotional disorders in children of bipolar, drug dependent and healthy parents

Disorder Group/sex		Conduct Disorder	Hyperactivity	Emotional Disorder
Bipolar	Boys	6 (11.1%)	7 (12.9%)	7 (12.9%)
	Girls	5 (10.8%)	4 (8.6%)	8 (17.3%)
Drug dependent	Boys	5 (10.8%)	6 (13%)	10 (21.7%)
	Girls	3 (5.3%)	4 (7%)	7 (12.5%)
Controls	Boys	4 (8.3%)	1 (2%)	4 (8.3%)
	Girls	3 (6%)	(0%)	7 (14%)
Results		$\chi^2 = 0.921$ $P > 0.63$	$\chi^2 = 8.879$ $P > 0.12$	$\chi^2 = 3.914$ $P > 0.141$

Table 2. Frequency of hyperactivity and conduct disorder in bipolar, drug dependent and healthy parents considering mother's smoking during pregnancy

Smoking by mothers during pregnancy	Disorder Groups	Conduct disorder		Hyperactivity	
		Positive	Negative	Positive	Negative
Bipolar	Smoking	(0%)	10 (100%)	(0%)	10 (100%)
	Not smoking	11 (12.2%)	79 (87.8%)	11 (12.2%)	79 (87.8%)
Drug dependency	Smoking	(0%)	10 (100%)	1 (10%)	9 (90%)
	Not smoking	8 (8.6%)	84 (91.4%)	9 (9.7%)	83 (90.3%)
Controls	Smoking	(0%)	(0%)	(0%)	(0%)
	Not smoking	7 (7.1%)	91 (92.9%)	1 (1%)	97 (99%)

Discussion

In addition to the genetic role, stressful events, imbalanced families and other anxiety factors have a role in the incidence of ADHD or its continuity.² The results of this study also shows that bipolar disorder in parents as a significant correlating factor may disturbs the balance of the family, creates anxiety and finally leads to behavioral problem in children. However, bipolar disorder in the parents increases the amount of trauma and other psychiatric disorders including mood disorders, psychosis and anxiety in children. Previous studies⁹ have shown that 51% of children with BMD parents have psychiatric disorders, the majority having ADHD, MDD and behavioral disorders. The results of the present study approve these results. Moreover, the present study found a 9.8% frequency of hyperactivity in children of drug dependent parents, which is significantly different from the controls with a 1% frequency ($P = 0.006$) showing the effect of drug dependency as a related factor in the incidence of psychiatric disorders in children and is in agreement with the results of previous studies,⁶ in which the prevalence of ADHD in children of semi-narcotic and cocaine dependent parents were separately studied and reported to be 13% and 8%, respectively.

Although there was no significant difference between the conduct disorder in the three groups of the study, the higher frequency of this disorder in BMD and drug dependent groups compared with the controls suggests that family problems including parent's mental illness and drug abuse play a significant role in the incidence of conduct disorder.¹ In the study of Chang et.al also children of BMD parents showed higher levels of destructive behavioral disorders compared with children of parents without any mood disorder.⁹ Furthermore, in the study of Hirshfield et al, the prevalence of behavioral disinhibition in children of BMD parents was reported to be significantly high.¹⁰

The results also showed that although the frequency of ADHD and disorders of the above mentioned groups were not significantly different between girls and boys, the frequency of both disorders was higher in boys than girls, and these results are almost in agreement with a controlled study in the United States, which

reported a higher prevalence of ADHD and conduct disorder in boys compared with girls.²

In this study, there was no significant correlations between smoking during pregnancy and the frequency of ADHD and conduct disorder in any of the groups. However, other studies such as Bolton et al have shown that ADHD symptoms and antisocial behaviors have both been seen in children whose mothers had smoking during their pregnancy and these symptoms were more seen in children with smoking mothers.¹¹ Line et al's study also showed that smoking mothers had children with a higher risk of ADHD compared with children with mothers who consumed alcohol or caffeine.¹² The incidence of disorder in children was also related with the amount of smoking. In the study of Wakschlag et al, mothers who smoke more than half a pack of cigarettes during pregnancy had sons with conduct disorders significantly more than mothers who did not smoke.¹³ Silberg et al in a study on 538 twin boys reported that the relationship between mother's smoking during pregnancy and conduct disorder symptoms of their sons was significant in cases whose mothers smoked ten or more cigarettes a day during pregnancy.¹⁴

Conclusion

ADHD and conduct disorder in children of parents with drug abuse disorders was higher than the control group, but was not different compared with the bipolar group. Therefore, it may be mentioned that any kind of mental disorder in parents may increase the risk of ADHD and conduct disorder in children. Further studies on the relationship between ADHD and conduct disorder in children and other mental disorders of parents may clarify this finding.

Limitations

For a more precise study and evaluation of ADHD and conduct disorder, it would had been better to use both Rutter's Form A (parents) and B (teachers) questionnaire, but since a great number of samples were selected from hospitalized patients in Shahid Beheshti Hospital, it was not possible to access the teachers to fill the Form B; therefore, just Form A was used in this study.

To increase the sensitivity of the test, it is better to conduct a structured clinical interview in addition to questionnaire to improve the validity of diagnosis. This was not carried out due to the time limitation.

In this study, since the demographic questionnaires were mainly completed by

fathers, and most of them did not have precise information about the number of cigarettes

Smoked by their wives; therefore, the amount of smoking during pregnancy may not be accurate.

Conflict of interest: The Authors have no conflict of interest.

References

1. Hechtman L. Attention Deficit / Hyperactivity Disorder. In: Sadock BJ, Sadock VA, Kaplan HI, Editors. Kaplan and Sadock's Comprehensive textbook of psychiatry. Philadelphia: Lippincott Williams & Wilkins, 2005. p. 3183-212.
2. Sadock BJ, Kaplan HI, Sadock VA. Kaplan & Sadock's Synopsis of Psychiatry: Behavioral sciences/clinical psychiatry. 9th ed. Philadelphia: Lippincott Williams & Wilkins; 2003. p. 1224-6, 1234-5.
3. Counts CA, Nigg JT, Stawicki JA, Rappley MD, Von Eye A. Family adversity in DSM-IV ADHD combined and inattentive subtypes and associated disruptive behavior problems. *J Am Acad Child Adolesc Psychiatry* 2005; 44(7): 690-8.
4. Piffner LJ, McBurnett K, Rathouz PJ, Judice S. Family correlates of oppositional and conduct disorders in children with attention deficit/hyperactivity disorder. *J Abnorm Child Psychol* 2005; 33(5): 551-63.
5. Chang KD, Steiner H, Ketter TA. Psychiatric phenomenology of child and adolescent bipolar offspring. *J Am Acad Child Adolesc Psychiatry* 2000; 39(4): 453-60.
6. Weissman MM, McAvay G, Goldstein RB, Nunes EV, Verdelli H, Wickramaratne PJ. Risk/protective factors among addicted mothers' offspring: a replication study. *Am J Drug Alcohol Abuse* 1999; 25(4): 661-79.
7. Johnston C, Mash EJ. Families of children with attention-deficit/hyperactivity disorder: review and recommendations for future research. *Clin Child Fam Psychol Rev* 2001; 4(3): 183-207.
8. Moghadam M, Yassami MT, Bina M, Abdolmaleki F, Bagheri Yazdi SA. Epidemiological study of behavioral disorders in the primary school students of Ghorveh and evaluation of the validity and reliability of Rutter teacher scale in assessment of behavioral disorder in 2001. *Kordestan Medical University Journal* 2002; 7(1): 7-12. (In Persian).
9. Chang KD, Blasey CM, Ketter TA, Steiner H. Temperament characteristics of child and adolescent bipolar offspring. *J Affect Disord* 2003; 77(1): 11-9.
10. Hirshfeld-Becker DR, Biederman J, Henin A, Faraone SV, Cayton GA, Rosenbaum JF. Laboratory-observed behavioral disinhibition in the young offspring of parents with bipolar disorder: a high-risk pilot study. *Am J Psychiatry* 2006; 163(2): 265-71.
11. Button TM, Thapar A, McGuffin P. Relationship between antisocial behavior, attention-deficit hyperactivity disorder and maternal prenatal smoking. *Br J Psychiatry* 2005; 187: 155-60.
12. Linnet KM, Dalsgaard S, Obel C, Wisborg K, Henriksen TB, Rodriguez A, et al. Maternal lifestyle factors in pregnancy risk of attention deficit hyperactivity disorder and associated behaviors: review of the current evidence. *Am J Psychiatry* 2003; 160(6): 1028-40.
13. Wakschlag LS, Lahey BB, Loeber R, Green SM, Gordon RA, Leventhal BL. Maternal smoking during pregnancy and the risk of conduct disorder in boys. *Arch Gen Psychiatry* 1997; 54(7): 670-6.
14. Silberg JL, Parr T, Neale MC, Rutter M, Angold A, Eaves LJ. Maternal smoking during pregnancy and risk to boys' conduct disturbance: an examination of the causal hypothesis. *Biol Psychiatry* 2003; 53(2): 130-5.

اختلال بیش فعالی - کمبود توجه (ADHD) و اختلال سلوک در

کودکان با والدین مبتلا به اختلال وابستگی به مواد

دکتر نوشین پرورش*، دکتر حسن ضیاءالدینی**، دکتر علی خردمند***،
دکتر حمید رضا بیاتی****

* استادیار، گروه روان‌پزشکی، مرکز تحقیقات علوم اعصاب، دانشکده پزشکی، دانشگاه علوم پزشکی کرمان، کرمان، ایران.

** دانشیار، گروه روان‌پزشکی، مرکز تحقیقات علوم اعصاب، دانشگاه علوم پزشکی کرمان، کرمان، ایران.

*** روان‌پزشک، مرکز تحقیقات علوم اعصاب، دانشگاه علوم پزشکی کرمان، کرمان، ایران.

**** روان‌پزشک، دانشگاه علوم پزشکی بیرجند، خراسان شمالی، ایران.

تاریخ دریافت: ۸۹/۱/۱۴

تاریخ پذیرش: ۸۹/۶/۹

چکیده

اختلال نقص توجه بیش فعالی و اختلال سلوک از جمله اختلالات به نسبت شایع دوران کودکی و نوجوانی می‌باشد. با توجه به تأثیرات سوء متقابل والدین مبتلا به وابستگی به مواد و یا بیماری دوقطبی در این زمینه، این پژوهش با هدف تعیین میزان شیوع اختلالات نقص توجه بیش فعالی و سلوک در والدین مبتلا به اختلالات وابستگی به مواد و اختلال دوقطبی انجام شد.

نوع مطالعه از نوع موردی-شاهدی بود و گروه مورد مطالعه، افراد مبتلا به اختلال وابستگی به مواد و اختلال دوقطبی بستری شده در بیمارستان شهید بهشتی کرمان که فرزند ۷-۱۱ ساله داشتند، بودند. گروه شاهد، افراد سالم بدون اختلال وابستگی به مواد و اختلالات دیگر روان‌پزشکی بود. در این مطالعه از فرم A راتر (فرم والدین) و پرسش‌نامه دموگرافیک برای جمع‌آوری اطلاعات استفاده شد. روش بررسی داده‌ها ANOVA، Chi-square و آزمون تعقیبی Tamhene بود.

نمرات راتر غیر طبیعی به طور کلی در فرزندان والدین وابسته به مواد ۱۱/۷ درصد، در فرزندان والدین با اختلال دوقطبی ۱۴ درصد و در فرزندان با والدین سالم ۶/۱ درصد بود که از نظر آماری اختلاف معنی‌دار وجود نداشت. فراوانی اختلال سلوک در گروه با والدین دوقطبی و وابسته به مواد بیشتر از گروه والدین سالم بود اما اختلاف معنی‌داری وجود نداشت. فراوانی ADHD در گروه والدین وابسته به مواد ۹/۸ درصد و در گروه شاهد ۱ درصد بود که از لحاظ آماری اختلاف معنی‌داری وجود داشت.

وابستگی به مواد می‌تواند به عنوان یک عامل استرسور در بروز ناهنجاری‌های روانی در فرزندان از جمله ADHD و اختلال سلوک نقش داشته باشد.

اختلال کم توجهی بیش فعالی، اختلال سلوک، وابستگی به مواد.

مقدمه:

روش‌ها:

یافته‌ها:

نتیجه‌گیری:

واژگان کلیدی:

تعداد صفحات: ۶

تعداد جدول‌ها: ۲

تعداد نمودارها: -

تعداد منابع: ۱۴

دکتر علی خردمند، روان‌پزشک، مرکز تحقیقات علوم اعصاب، دانشکده پزشکی، دانشگاه علوم پزشکی کرمان، کرمان، ایران.
Email: dr.alikheradmand@yahoo.com

آدرس نویسنده مسؤول: