ABSTRACT

**Introduction:** Psychiatric disorders are common in pregnant women. The challenge for doctors lies in treating mental illness, whilst minimizing exposure of the child to medication. **Objective:** characterize perinatal period, morbidity, psychomotor development and current situation of children whose mothers had been exposed to psychotropic drugs during pregnancy and compare these outcomes with a control group. **Method:** Retrospective study performed in a maternity hospital of Coimbra, Portugal, during six years. A group of mother–child pairs exposed throughout gestation to psychotropic drugs (psychotropic group) was compared to a healthy group of mother–child pairs not exposed to psychotropic medication throughout pregnancy (no psychotropic group). The two groups were compared in terms of maternal age, neonatal data (gestational age, birth weight, APGAR score), breastfeeding length and screening of psychomotor development of children at 2 years old. The psychotropic group was also characterized in terms of congenital malformations, withdrawal syndrome in the neonatal period and current situation. **Results:** The sample includes 119 mother–child pairs of the psychotropic group and 100 of the no psychotropic group. Mental disorders of the psychotropic group were divided in three groups: major depression (n=92), bipolar disorder (n=16) or anxiety disorder (n=11). Those women were treated with one or more of the following psychotropic drug: benzodiazepines, selective serotonin reuptake inhibitors, tricyclic antidepressants, neuroleptics or mood stabilizers. Withdrawal syndrome occurred in 0.084% cases and congenital malformations in 1.7% on psychotropic group. Comparing both groups, psychotropic group showed a superior maternal age, more advanced gestational age at delivery and a lower length of breastfeeding. There were no differences regarding the rate of breastfeeding, prematurity, birth weight, APGAR score or psychomotor development. Currently, 87% of the children from psychotropic group live with their mothers. **Conclusion:** This study suggests lack of adverse outcomes to the children exposed in utero to psychotropic medication. Both groups had similar outcomes. The decision of treating pregnant women with mental disorders should be based on the severity of the disease and ensure the well being of the mother and child.

INTRODUCTION

Psychiatric disorders and mental health related problems have been described as one of the main causes of morbidity and premature death around the world. (1) Childbearing age is a period of time with increased vulnerability to the onset or recurrence of psychiatric disorders. Thus, young women have a higher risk of suffering from mental disorders during pregnancy. (2,3) Some studies even show that depression during gestation is more common than in the post natal period. (4) Disturbed mental state of pregnant women may impair their health and lead to negative effects on child’s growth and development. (3) The mechanisms of this negative effect are still unknown. However some evidence suggest an impact of maternal symptoms on infant’s hypothalamic–pituitary–adrenal–axis and subsequent increased levels of catecholamines and cortisol in newborns. (3,5) For instance, a pregnant woman with untreated anxiety or depression can have a higher risk of pre-eclampsia, low birth weight, intrauterine growth restriction and preterm delivery. Similarly, the newborn has a higher risk of poor adjustment to extrauterine life and of comorbidities associated with prematurity and very low birth weight. (2–4,6) There are also some studies showing a higher occurrence of cognitive delay, behavioral and emotional difficulties as well as a negative effect on maternal–infant bonding. (2–4) For all of these, an adequate control of mother’s psychiatric disorders during pregnancy, through safe and effective psychotropic medication, has become imperative. There are many concerns regarding the use of psychotropic medication during pregnancy: teratogenic risks, negative effects on delivery and on neonatal outcomes, detrimental neurobehavioral effects and on psychomotor development. Timing of exposure is important, since teratogenic effects occur when there is an exposure in the first trimester whereas the effects on neurodevelopment and behaviour can occur with exposure throughout all pregnancy period. (2) Increasing evidence about the risks and benefits of psychotropic drugs use during pregnancy made possible to make more rational decisions about their use. Growing evidence suggests that many of these agents are safe and, because of the risks associated with uncontrolled mental illness, physicians often recommend maintenance of treatment with psychotropic drugs throughout gestation. (7,8) Antidepressants represent the class of psychotropic medication with a highest number of studies investigating their effect on pregnancy and child’s out-
comes. The use of Selective Serotonin Reuptake Inhibitors (SSRI) is gradually replacing tricyclic antidepressants (TCA) prescription. The majority of studies support the safety of TCA and SSRI throughout pregnancy. There are some studies showing a higher incidence of perinatal syndromes with jitteriness, agitation, tachycardia, hypotonia, motor restlessness or feeding difficulties, but these effects appear to be mild and transient. The majority of studies show no negative effects on global Intelligence Quotient, language or behavioural development in preschool children whose mothers were treated with antidepressants (TCA or SSRI) during pregnancy.

There are fewer studies regarding antipsychotics use during pregnancy. Antipsychotic agents can be divided into three classes: high–potency agents such as haloperidol, low potency agents such as chlorpromazine and the newer agents such as risperidone, clozapine and olanzapine. Haloperidol is the subject of most studies and its use in first trimester of pregnancy appears to be free from teratogenic effects. Occurrence of perinatal syndromes is also described in association with these agents, although limited in time. There is limited data about their effect on children’s neurobehavioral and development outcomes.

There is also limited data on the use of benzodiazepines during pregnancy. They are associated with floppy infant syndrome (symptoms such as hypotonia, hypothermia, respiratory depression, arrhythmias and decrease sucking reflex) when prescribed in the third trimester of pregnancy. There are also some reports of teratogenic effects when used in the first trimester. As a rule, drugs with established safety records should be used, within the lowest dosage and for the possible shortest duration, avoiding use in the first trimester or multidrug regimens. Commonly used mood stabilizers such as lithium, valproic acid and carbamazepine are known teratogens.

They are also associated with poor adaptation to extrauterine life and floppy baby syndrome. Their use should be avoided during pregnancy, whenever it is possible, without risk for the mother.

The purpose of the present study was to characterize the perinatal period, morbidity, psychomotor development and current situation of infants and children whose mothers had psychiatric disorders and had been exposed to psychotropic drugs during pregnancy. The authors also aimed to compare these outcomes with a control group not exposed to psychotropic medication during pregnancy.

METHODS

This study was performed in a maternity hospital of the central region of Portugal where there born about 3,000 infants per year. In this Unit, a multidisciplinary team follows pregnant women with psychopathology and their children. Women are accompanied and treated by obstetricians and psychiatrists during pregnancy and maintain the psychiatric support during the first year after their child’s birth. The children are accompanied by paediatricians until about two years of age.

The study included the mother–child pairs whose mothers were treated with psychotropic drugs during pregnancy and that were followed in that maternity hospital from 2001 to 2006.

Data was obtained by the access of the clinical charts of pregnant women and the following data was analysed: maternal age, psychiatric diagnosis, type of psychotropic medication used during pregnancy and data relative to birth (gestational age, birthweight and APGAR score). The authors classified birthweight in small, appropriate and large for gestational age according to Lubchenco Growth Charts. Children’s clinical charts were also accessed and it analysed the presence of congenital malformations, withdrawal syndrome in the neonatal period, breastfeeding at hospital discharge, diseases in the following years and deaths. Children’s follow-up also included the evaluation of psychomotor development at two years old performed with Mary Sheridan Scale. It also analysed with whom children lived at the current age.

The study group – psychotropic group – was compared with a control group (no psychotropic group) that was obtained from mothers without mental disease and non-mediated during pregnancy. Those mother–child pairs were followed in a primary care facility in the central region of Portugal. The two groups were compared regarding maternal age, neonatal data (gestational age, birth weight, APGAR score), breastfeeding length and screening of psychomotor development, at 2 years old by Mary Sheridan Scale.

The statistical analysis was performed using SPSS ® version 21. The analysis of continuous variables was made using t–student and Mann–Whitney tests. Categorical variables were analysed with the chi–square or the Fisher exact test. It was considered statistical significance: p <0.05.

RESULTS

The study population comprised 219 mother–child pairs. Of those, 119 mothers had used psychotropic medication during pregnancy (psychotropic group) and the other 100 had no exposure to medication and did not report any mental disease (no psychotropic group).

Mothers of the psychotropic group were accompanied and treated by psychiatrists and obstetricians during pregnancy. After their child’s birth, they kept psychiatric support. Their children were followed in the outpatient pediatric clinic appointment until about two years of age. Mental disorders of those mothers were included in one of the following groups: major depression (n=92), bipolar disorder (n=16) or anxiety disorder (n=11). Psychotropic medication group used in each mental disorder is presented in table 1.
Benzodiazepines were prescribed in subjects with the three different mental disorders (table 1). Among the subjects having benzodiazepines, 54 took diazepam (5 or 10 mg), 25 alprazolam (0.5 or 1 mg), 7 mebazolam, 4 lorazepam (doses between 1 and 2.5), 3 oxazepam (15 mg), 3 ethyl loflazepate (2 mg) and 2 bromazepam (3 mg). SSRI were mostly prescribed to pregnant women with major depression, but also with the other groups of mental disturbances. The most prescribed SSRI was fluoxetine (20 mg) (45), followed by paroxetine (10 or 20 mg) (10), sertraline (50 or 100mg) (9), fluvoxamine (50 mg) (4) and citalopram (20mg) (2). Among the women given tricyclic antidepressants (TCA), 23 took maprotiline (75 mg), 18 amitriptyline (25 mg), 4 clomipramine (75mg) and 3 dosulepin (60 mg).

<table>
<thead>
<tr>
<th>Mental disorder</th>
<th>BZD n (%)</th>
<th>SSRI n (%)</th>
<th>TCA n (%)</th>
<th>Neuroleptics n (%)</th>
<th>Mood stabilizers n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major Depression (n=92)</td>
<td>71 (77)</td>
<td>67 (73)</td>
<td>47 (51)</td>
<td>6 (6.5)</td>
<td>3 (3.3)</td>
</tr>
<tr>
<td>Bipolar disorder (n=16)</td>
<td>13 (81)</td>
<td>7 (44)</td>
<td>4 (25)</td>
<td>12 (75)</td>
<td>5 (31)</td>
</tr>
<tr>
<td>Anxiety disorder (n=11)</td>
<td>3 (100)</td>
<td>1 (9)</td>
<td>3 (27)</td>
<td>0 (0)</td>
<td>1 (9)</td>
</tr>
<tr>
<td>Total</td>
<td>95 (80)</td>
<td>75 (63)</td>
<td>54 (45)</td>
<td>18 (15)</td>
<td>9 (7.6)</td>
</tr>
</tbody>
</table>

Table 1 Distribution of psychotropic drugs prescribed in psychotropic group. Legend: n = number of pregnant women treated with psychotropic drugs (some women took more than one drug of each group); BZD = Benzodiazepines; SSRI = Selective Serotonin Reuptake Inhibitors; TCA = Tricyclic Antidepressants

Neuroleptics or antipsychotic drugs were prescribed mostly to women with bipolar disease, but also in cases of major depression (table 1) and the prescribed drugs were: risperidone (1 or 2 mg) (4), olanzapine (5 or 10 mg) (3), haloperidol (between 2 and 10 mg) (3), levomepromazine (25 mg) (2), sulphiride (50 mg) (2), quetiapine (between 25 and 200) (2) and chlorpromazaine (25 mg) (1). Finally, the least prescribed drugs were mood stabilizers (prescribed to women with three different mental disorders) and the chosen drugs were valproic acid (250 mg) (7) and topiramate (25 or 50 mg) (2). The doses of these drugs were in the therapeutic ranges in all cases. In many cases, each pregnant woman was treated with more than one drug, even from the same group of psychotropic drugs.

In this retrospective analysis it was not possible to determine the exact period of time in which mothers were under psychotropic medication.

They all have in common, the fact of having been treated during the third trimester of pregnancy until delivery. In some cases, women who were treated with psychotropic drugs before pregnancy, maintained the medication but the dose can be adjusted, as it occur with paroxetine, because of the risk of cardiac malformations. But sometimes the risk of stopping medication may exceed its potential teratogenic effects.

One newborn of the psychotropic group (0.084%) had symptoms of withdrawal syndrome, showing tremor after 12 hours of life. There was no need of treatment and the symptoms disappeared within the first 24 hours. He was a full-term newborn of a mother with major depression treated during the last trimester with amitriptyline, fluoxetine and alprazolam in therapeutic ranges. Two newborns of the psychotropic group showed congenital malformations (1.7%), one of them being a cardiac malformation. One infant was born with unilateral cryptorchidism, being born to a mother with depression treated with maprotiline 75 mg, diazepam 5 mg and alprazolam 1 mg. The other newborn had atrioventricular septal defect and was born to a mother with anxiety disorder that have been treated with amitriptyline 25 mg, fluoxetine 20 mg and alprazolam 0.5 mg.

Characteristics of the mother–child pairs of psychotropic group are shown in the table 2.

Mother–child pairs of psychotropic group were compared with the no psychotropic group (Table 3). Mean maternal age during pregnancy was superior in psychotropic group (29.32 versus 27.01 years–old; p=0.001). The proportion of mothers older than 35 years–old was much higher in psychotropic group (20%) compared with the other group (5%). The rate of prematurity was similar in both groups, and there was no big preterm in either group, with a minimum of 32 weeks of gestational age in both groups. Mean birth weight was also similar in both groups and none of the newborn had very low birth weight (<1500g). The lowest weight was 1815 grams in psychotropic group and 1850 grams in the other group. Ten newborn (8.4%) of the psychotropic group and six (6%) of the no psychotropic group had low birth weight (<2500g). High birth weight (>4000g) was present in eight newborn (6.7%) of the psychotropic group and two (2%) of the other group.

In both groups there was only one newborn with a poor adaptation to extra–uterine life (APGAR score at 5 minutes less than 7). He was a full–term newborn from a mother with depression treated with paroxetine and diazepam during pregnancy.
One hundred and one newborn (85%) of the psychotropic group (n=119) was breastfed at the time of hospital discharge.

In the other group, it was only possible to determine that in 81 (81%) mother–child pairs, 67 (83%) were breastfed, at least during the first days of life. Mean length of breastfeeding was only possible to detect in 95 of the 119 cases of psychotropic group and it was superior in the last group (p=0,01) (table 3).

In clinical follow-up of children of both groups, it was performed a screening of psychomotor developmental delay at 24 months and it was compared between the two groups. Only 77 of the 119 children of the psychotropic group were observed in follow up at the age of 24 months. Two children of the psychotropic group (2,6%) had an abnormal screening of their psychomotor development compared with 6 children (6%) of the other group (p=0,47).

Finally, it was possible to have current news of 70 children (59%) of the psychotropic group (table 4). At the time of contact, children were aged between five and eleven years–old. Most of the children currently live with their mothers (87%) and there were four of them (5,7%) who were adopted: three were born from mothers with major depression and the other one from a mother with bipolar disorder. There were two children who died, both of them from mothers with major depression. One child died at the age of nine months victim of a retinoblastoma and the mother had been treated with fluoxetine. The other child died of histiocytosis X and his mother had been treated with maprotiline 75 mg and diazepam 10 mg.

**Table 2** – Perinatal characteristics of the mother–child pairs of psychotropic group Legend: SGA – small for gestational age; AGA – appropriate for gestational age, LGA – large for gestational age

**Table 3** – Comparison of perinatal characteristics of the mother–child pairs of psychiatric group and no psychiatric group. Legend: AGA – appropriate for gestational age; LGA – large for gestational age

**Table 4** – Current situation of children from psychotropic group

**DISCUSSION**

This study shows the results of a follow–up of mothers with three distinct mental disorders plus a wide variety of psychotropic drugs used. It also reveals important results for physicians who care for mental illness and perinatology.

Indeed, psychiatric disorders are quite common in women of reproductive age, particularly depression and anxiety disorders. (4,7,14–16) In fact, in this study, the most represented mental disorder is major depression. There is
few data about the effect of pregnancy on the course of bipolar disorder, but the postpartum period is of high risk for relapse, especially if the patients quit mood stabilizers drugs. (7) In this example, anxiety disorders were the least represented mental disorder, it has to be related in this sample, as long as and it may be related, to the fact that it usually receives considerably less attention than depression, in either perinatal practice or research. (12,18) In fact one study shows that anxiety is even more frequent than depressive symptoms in early pregnancy. (16) Postpartum period is of high risk for relapse in women with anxiety disorders. This should alert health professionals who deal with these patients and their children, since that the decompensation of the disease can lead to an inability to care for their infants. (7) Pregnancy is a highly vulnerable period for women with a psychiatric disorder and during those months, the disease may relapse or worsen and frequently they need to adjust the psychotropic medication. (12,18) Despite the high frequency of psychiatric disorders during pregnancy, less than half of the women accept medication because they fear harmful effects on the fetus. (19) Psychiatric symptoms for themselves can affect pregnancy because they will affect mother’s emotional state, functional status, ability to obtain a good prenatal care and potential to engage in dangerous behaviors. After child’s birth, untreated and mentally unstable mothers may have an effect on infant’s growth and development. (7,15,20) Therefore, on one hand, the impact of maternal mental illness symptoms on the child will have negative effects during pregnancy, on child’s growth, development and future behavior. (3) But, on the other hand, there is the concern about the effects of psychotropic drugs on the fetus and, later, the child. In fact, possible risks of psychotropic drug use during pregnancy must be weighed against the benefits of having mentally stable mothers during and after pregnancy. (7) Usually, benefits of psychotropic therapy outweigh the risks. (4,12,18) In this study, the most prescribed class of psychotropic drugs was benzodiazepines. These agents are one of the most commonly used anxiolytic drugs, even in pregnant women. (13) When these drugs are used at or near term, like it happened in the present study, the biggest concern is that they may cause fetal dependence or withdrawal syndrome. (13) A meta-analysis about the effects of benzodiazepines during pregnancy has been published (13) and it concludes that, any benzodiazepine should be avoid in the first trimester of pregnancy, in spite of the vulnerability of the fetus and the possibility of toxic effects in this period of organogenesis. Also, it should be determined and prescribed the lowest effective dose (13).

SSRIs were the second most prescribed psychotropic drugs followed by TCAs. Antidepressant drugs are among the best studied medications during pregnancy, particularly SSRIs, and there are many evidence papers about their safety. (7) In this sample, SSRIs are the most prescribed antidepressant drugs, which is similar as to what is described in many papers. (11, 19) SSRIs are used in about 2.3 to 6.2% of all pregnancies and its prescription is perceived as having favorable risk:benefit ratio. (11)

Following SSRIs prescription in 63% of women were TCAs in 45%. In fact, prescription of TCAs is being replaced by SSRIs during the last decade. (15) (21) Antipsychotics were prescribed to 6.5% of pregnant women with major depression and to 75% of women with bipolar disease (table 1). The use of these psychotropic drugs during pregnancy has been increasing for the last years. (22) Observational studies with antipsychotics during pregnancy are limited in numbers and size, but the major concerns about these drugs are their effect on fetal growth. (23) In this sample, there were no effects on the growth of newborns exposed to antipsychotics. The least psychotropic drugs prescribed were mood stabilizers in 7.6% of all women, being prescribed to the three groups of mental disorders, mainly in Bipolar disorder. The chosen drugs were valproic acid and topiramate. Minimal safety data is available about the use of topiramate during pregnancy. The biggest concern about valproic acid is its use during the first trimester because of fetal valproate syndrome that includes craniofacial abnormalities, cardiovascular abnormalities and developmental delay. (15) However, in this retrospective analysis, the authors only could confirm its use in the last trimester. Also, there was not any case of a newborn with such malformations.

There was only one case of withdrawal syndrome (0.084%) and the mother had been treated with amitriptyline, fluoxetine and alprazolam. Most studies report symptoms of withdrawal syndrome in about 30% of the infants exposed to SSRI during pregnancy and 20-50% of the ones exposed to TCA. (12,18,24,25) Figures on the incidence of withdrawal syndrome after exposure to BZD, antipsychotic drugs, as well as mood stabilizers are lacking. In this sample, the occurrence was much lower than expected, having occurred in 1 of the 75 cases of SSRI’s intake and 1/54 of tricyclic antidepressant use. Withdrawal syndrome is caused by the discontinuation of psychotropic drugs that cross the placenta and suddenly decrease in newborn’s circulation soon after birth. (12) Symptoms of withdrawal in infants resemble symptoms in adult, typically do not develop until eight hours after birth and include tremors, like happened in the described case, irritability and feeding difficulties. (12) Most infants do not require admission to a neonatal unit, as it happened with the one case described. It may have been caused by either of the three drugs or by the combination of the three. In fact, caution is indicated when an adjunctive benzodiazepine is combined with a SSRI. (15)

In the psychotropic group, there was 1.7% of congenital malformations (two cases, one being an atrioventricular
septal defect), which is similar to the general population that has a baseline risk of malformations of about 3% and specifically of cardiovascular malformations of 1%. (26) In the case of the cardiac defect, the mother had been treated with a SSRI, a TCA and a BZD. Some studies with SSRIs have found an association between this antidepressant group and cardiac anomalies, such as septal heart defects. However, all of those studies had some methodological limitations and the prevalence of malformations remained comparable to the general population. (19) In fact, several studies conducted to date show that the occurrence of congenital malformations in children whose mothers took antidepressants or other psychotropic drugs during pregnancy is not higher than in the general population. (3,15,21,27) The first trimester is the most critical period of pregnancy for drug-induced dysmorphology and in this study the prescription in the first trimester was not possible to evaluate. (4,7) However, human fetal brain develops throughout gestation and injury may occur at various critical times of exposure besides the first trimester of pregnancy. (4)

Within the psychotropic drug group, the authors have found relatively similar perinatal characteristics (Table 2). Thus, the mean gestational age was similar in the three groups of mental illness. The mean birth weight was 200 grams, lower in bipolar disease compared to the two other groups, but instead in this group there was no newborn small for gestational age. Authors also compared some characteristics of the whole psychotropic group with the group without psychiatric disease (Table 3). First, mean mother’s age at delivery was about two years superior in psychotropic group (p=0,002). This finding is similar to other studies, in which there is a tendency for women with a mental disease to become mothers in an older age. (10,22,28) This can be explained by an increased risk of mental illness with more advanced maternal age.

Mean gestational age was similar in both groups (38.1 ±1.7 vs. 38.3 ± 1.4). Also, prematurity had a similar rate in both groups. This fact demonstrates that the risk of preterm birth was not higher on treated maternal psychiatric illness than in the general population. Some studies found an association between SSRI or antipsychotics exposure and lower gestational age compared to other psychotropic drugs or to no exposure. (8,15,21) In this study, the effect of individual antidepressant or other psychotropic drug on gestational age was not analyzed, but in the whole psychotropic group there was no effect on prematurity comparing with the other group. On the other hand, there is a proven association between uncontrolled psychiatric illness and prematurity. (4,6,28) Mean birth weight was also similar in both groups. However, there were more large for gestational age (>90th centile) newborns in psychotropic group and instead more appropriate for gestational age in the control group. Authors only found a similar result in a study comparing the effect of second generation antipsychotics given with other psychotropic drugs to healthy control women. (8)

Some studies have found an association between uncontrolled psychiatric disorder and preterm birth, low birth weight or intrauterine growth restriction. (4,6,28) That may be explained by prenatal stress promoting adverse birth outcomes through hormonal deregulation, placental hypoperfusion and consequent restriction of oxygen and nutrients to the fetus. (6) In treated and controlled psychiatric illness, such effects appear to be less common (28), as it happened in the psychotropic group of this study, in which none of those effects occurred. Therefore, this is one more item to take into account in the decision of treating and prescribing psychotropic drugs to pregnant women with mental disease. There are different results about the effect of psychotropic drugs on the APGAR score. Some studies have found lower APGAR scores in children exposed to psychotropic medication during pregnancy (9,21), but that did not occur in the present study, since there was no difference in APGAR scores between the two groups, which is also comparable to other papers. (5,29) The two groups were similar regarding the rate of mothers who breastfed. However, mean length of breastfeeding was superior in no psychotropic group (p=0,01) (table 3). It may be explained in part because mothers with treated mental disorder concern about potentially negative effects of the medication on their infant and more easily give up breastfeeding.

Several studies have focused on the effect of psychotropic drugs, particularly antidepressants, on neurodevelopment of children. (3,4,10,14,29,30) Some report that the use of antidepressant drugs does not have adverse cognitive, language and temperament effects on children exposed during pregnancy. (3,4,10,21,29) Others have found an association between exposure to antidepressants and subtle effects on motor development and motor control. (9,30) There is a remarkable absence of studies of developmental outcomes following pregnancy exposure to psychotropic drugs other than antidepressants. Still, uncontrolled and untreated depression and anxiety may be associated with lower cognitive and language achievements. (4,20,30) In this sample, during clinical follow-up of children from both groups, it was performed a screening of developmental delay at 24 months. However, only 77 children of the psychotropic group were observed in the follow up at the age of 24 months. In the psychotropic group 2,6% had an abnormal screening of their psychomotor development compared with 6% of the other group (p=0,47), showing no differences on neurodevelopment outcome.

Finally, the authors were able to have current news of 70 children (59%) of the psychotropic group. This was a unique study to evaluate this situation in children whose mothers were treated with psychotropic drugs, according to the authors. Most of the children currently
live with their mothers (87%), four of them (5.7%) were adopted and three (4.3%) actually live with their grandparents. The remaining two (2.9%) had died of neoplastic disease. There are no current data about adoption in author’s country, but according to a North-American study about 2% of the general population is adopted. (31) In a sample whose mothers had a probable chronic disease that often progresses with functional disability, it is not surprising that 10% of children, 5 to 11 years later, are not under the responsibility of their mothers. However, socio-economic assessment was not made, so it is not possible to take any conclusions on this subject.

This study had some methodological limitations that began with the fact of being a retrospective analysis. There was incomplete information available, mainly on what concerns to the exact period of time of psychotropic drugs exposure and its dosages. Also, children developmental evaluation should have been done with a different scale since it was performed with a screening scale (Mary–Sheridan scale) that can not lead to a definitive diagnosis.

Authors did not examine other drugs or medical conditions as covariates, which, at least in theory, could have influenced our results. Furthermore, evaluating the social characteristics of the assessed groups would enable the authors to identify potential confounding variables that may affect pregnancy outcomes, such as socioeconomic status and lifestyle differences. Finally, there was no data on psychotropic drug exposure during breastfeeding or other postnatal exposures, which might influence rates of developmental delay.

CONCLUSIONS

Management of mental disorders during pregnancy should depend on severity of the disease and should be attended by psychiatrists in a multidisciplinary team, with close articulation with obstetricians. Decisions regarding the use of psychotropic medications should be individualized and the most important factor is the woman’s level of functioning and well-being without medication. Although, it is not possible to take any definitive conclusion from this study, the results exposed may be helpful for the design of future prospective studies and for the risk–benefit decision and counseling of pregnant women with mental disorders. This study contributes to the body of literature suggesting lack of adverse outcomes to the children exposed in utero to psychotropic medication, when it is done with caution.

REFERENCES