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Resultados perinatais e aspectos psicopatológicos da epilepsia na gravidez

Perinatal results and psychopathologic aspects of epilepsy in pregnancy

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ABSTRACT

Objective: To evaluate the effect of epilepsy on the psychopathologic aspects and perinatal results of pregnancy.

Study design: A prospective case-control study.

Population and methods: Pregnant women with a previous diagnosis of epilepsy were compared with a control group of healthy pregnant women, regarding perinatal results, psychological aspects of pregnancy and epilepsy and psychopathology occurring during pregnancy.

Results: Planned and desired pregnancies were more frequent in the control group. There were no statistically significant differences between the two groups in relation to perinatal results. Epileptic women tended to have a worse self concept of their social acceptance, psychological maturity and impulsivity, and their auto efficiency was significantly lower. They also had a greater tendency to refer psychopathological symptoms like obsessions-compulsions, interpersonal sensitivity, depression, anxiety, hostility, phobic-anxiety, and paranoid ideation. They had significantly higher rates of psychoticism.

Conclusions: Our data suggest that perinatal results in epileptic pregnant women are similar to those of the general population, which may reflect an enhanced prenatal surveillance. However, epileptic women had a worse auto efficiency and a higher frequency of psychoticism.

Keywords: Epilepsy; Pregnancy; Psychological aspects; Psychopathology

INTRODUCTION

In modern societies, to suffer from epilepsy is still a “stigma” reflecting itself in the person’s everyday life and which will limit her/his aspirations of achieving

her/his own potentialities as a human being. Moreover, some myths still persist about this pathology: epilepsy is still associated with supernatural forces and with mental disease; it is considered a serious life-long disease; it is associated with chronic medication and it is considered to be an obstacle to carry out a great number of activities¹.

Besides their basic experience as being “women”, epileptic women have a learning that is often acquired in difficult circumstances with limitations on their ex-

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pectations. They also have some particular problems: 40% of the epileptic women are in the fertile age range; seizures can be provoked by menstruation or happen during sexual activity; confusion between seizures and orgasm is possible; there is an interaction between antiepileptic drugs (AED) and oral contraceptives; they are generally afraid of being rejected by others in a relationship¹⁻³. All these factors have obvious psychological consequences, like a decrease in self-esteem and selfimage, insecurity, fear and anguish, isolation, rejection and stigmatisation, educational and social difficulties and familiar overprotection¹.

It is frequent to find psychopathological disturbances in an epileptic patient, as well as emotional and relational symptoms, anxiety, affective changes, psychomotor slowing, aggressive behavioural disturbances, psychosis, personality changes and sexual disturbances^{1,4}.

Pregnancy represents a stage in life that fulfils women's role and allows them to form their intended family. However, in epileptic women, pregnancy affects them physically and frequently creates unpleasant symptoms. It also provokes fears and insecurity in relation to their children. In pregnancy it is usual to find psychopathological changes resulting from that state, like anxiety, insecurity, mood changes, psychotic reactions (which are more frequent during puerperium); and frequent emotional liability, especially in the last three months of pregnancy¹. However, the worsening of the pre-existent pathology is not usual.

The birth-rate of epileptic women is very inferior to what is expected, although the marriage rate is similar to the general population. This could happen because those women have ovulatory and menstrual irregularities. It also could be the result of seizure's effects on the hypophysis or occur due to pregnancy avoidance caused by their fear of health problems. There is one epileptic in each 200 pregnant woman (0.5%)⁵.

Pregnancy in epileptic women is considered of high risk because the changes in the metabolism and plasma concentrations of the AED make the control of seizures more difficult^{1,2,3}. The risk of an increase of the frequency of seizures during pregnancy and labour is high (25-33%)^{2,3,5}. These women also have a higher risk of complications during pregnancy and

labour and their children have a higher morbidity and mortality^{2,3,5}.

The aim of this study was to assess the influence of the epilepsy on pregnant women, studying the evolution of epilepsy and the development of pregnancy. Evaluated items were evolution and outcome of pregnancy, psychological aspects of pregnancy and epilepsy and psychopathology during pregnancy.

MATERIAL AND METHODS

Our study group was composed by 21 pregnant epileptic women, who attended the Outpatient Epilepsy and Obstetrics Clinics, between January 2004 and December 2007. These women were referred to Obstetrics Outpatient consultation with diagnose of epilepsy and had a stabilized disease (with no seizures in the year preceding to pregnancy). This study also included a control group, composed of 40 pregnant women without any pre-existent pathology (neurological or psychiatric) matched for age and gestational age, selected among pregnant women who, during the same period of time, attended the Outpatient Consultation of ours Obstetrics Clinic – for each epileptic patient who went to Outpatient Consultation we had selected the two next pregnant women attending to the Outpatient Consultation without any pre-existing pathology. One of the women from control group was excluded because her inventories were inadequately fulfilled.

A structured clinical interview was the tool used for assessment, including: a "Questionnaire about epilepsy and pregnancy", elaborated by the authors; an "Inventory of physical selfconcept" (A. Vaz Serra, 1988) and the "SCL 90 - E"- Self-report inventory (Derogatis, Yevzeroff, & Wittelsberger). The interview was performed once in both groups during the first trimester of pregnancy.

Items evaluated in the questionnaire were pregnancy desire and planning, as well as pregnancy related worries and satisfaction.

The "Inventory of physical self-concept" describes 4 factors, concerning: F1 – social acceptance; F2 – auto-efficiency; F3 – psychological maturity and F4 – impulsivity. "Selfconcept" is defined as the percep-

tion the individual has about himself and the resulting concept that he makes of himself. A good “physical self-concept” implies a type of person who thinks she/he has a body that causes a good impression on others, that gives an impression of vitality and that is able to communicate with others⁶.

The SCL 90-E is a multidimensional symptom self-report inventory that quantifies psychopathology in terms of nine primary symptoms/constructs: Somatization (SOM), Obsessions-Compulsions (O-C), Interpersonal Sensitivity (INT), Depression (DEP), Anxiety (ANX), Hostility (HOS), Phobic-Anxiety (PHOB), Paranoid Ideation (PAR) and Psychoticism (PSY)^{7,8}.

The surveillance of these women’s pregnancies included folic acid >1st consultation, AED levels at 1st, 2nd and 3rd trimester, routine fetal ultrasound between 10-13th, 18-22th and 28- 32nd week of gestation and fetal echocardiography if AED intake.

Data were collected in a personal computer data base and statistical analysis was performed in SPSS version 15.0, using chi-squared test for qualitative variables and the t-test for quantitative variables. A value of $p < 0.05$ was considered as statistically significant with an 95% confidence intervals.

RESULTS

Our population consisted of 21 pregnant women, aged between 24 and 36 (mean age of 28.4 ± 3.6 years) generally with a low educational level (5 women with primary school, 7 with basic school, 4 with secondary school and 5 with university frequency). Obstetric history revealed 8 multigesta women. There was one twin pregnancy.

The contraceptive methods used before pregnancies were: mechanical barriers, spermicidal or periodic abstinence in 52.4%; hormonal contraception in 38.1% and intrauterine device (IUD) in 9.5%.

Analysing the epileptic disease outcome, we found that 14 women were under AED before pregnancy (11 under carbamazepin, 2 with lamictal and 1 with valproate). Of these, 3 had epileptic crisis (several epileptic convulsions occurred in the puerperium period of one patient) and 2 have aggravated their epilepsy during pregnancy with need to increase or

change their medication. Two others not medicated before pregnancy had to initiate carbamazepin 400 e 600 mg after epileptic crisis on the 3rd and 1st trimester, respectively. Two women taking carbamazepin suspended their medication without the occurrence of crisis during pregnancy.

The woman expecting twins didn’t experience any convulsions during pregnancy or puerperium and also didn’t need to increase the AED dose.

Obstetric results are presented in terms of maternal and perinatal morbidities and the aspects we point out are those that most authors consider to be influenced by the epileptic disease^{2,3,4,9,10}.

In the epileptic group 33.3% initiated folic acid therapy in the preconceptional period (vs. 7.5% in the control group), 33.3% in the first trimester (vs. 80%) and 28.6% after the 13th week (vs. 12.5%). In this same group, 52.4% of women underwent first trimester fetal ultrasound (against 87.5% of the non-epileptic group; $p = 0.0015$).

We found pregnancy complications in 23.8vs22.5% ($p = n.s.$) – 2 renal colic, 1 urinary tract infection, 1 pruritis graviditis and 1 discordant growth in the epileptic group; 3 hypertensive disorders, 2 threatened preterm labour, 1 gestational diabetes, 1 first trimester bleeding, 1 renal colic and 1 severe anaemia in the control group.

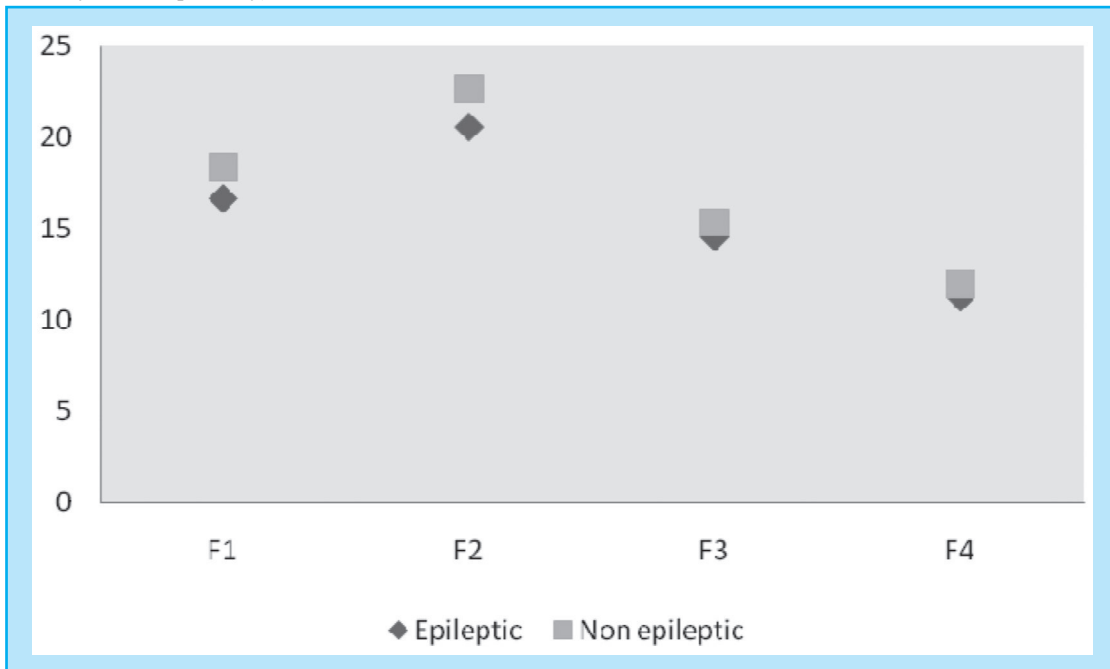
There was 1 reported case of intrauterine growth restriction in both groups (4.7vs2.5%; $p = n.s.$), and there were 3 fetal malformations registered – 2 in the epileptic group (interventricular communication; Mobius syndrome) and one in the controls (9.5vs2.5%; $p = n.s.$).

Preterm delivery before 32nd week gestation occurred in 2 pregnancies in both groups – 9.5 vs. 5% ($p = n.s.$). Caesarean section was the mode of delivery in 42.9 vs. 30% ($p = n.s.$) and neonatal birth weight was 3309 ± 436 vs. 3261 ± 490 g ($p = n.s.$).

After delivery the contraceptive methods used by the epileptic women were: mechanical barriers, spermicidal or periodic abstinence in 28.6%, tubal sterilization in 28.6%; hormonal contraception in 19%, intrauterine device in 14.3% and progestative contraceptive implant in 9.5%.

Through the analysis of our “Questionnaire about epilepsy and pregnancy”, we found that

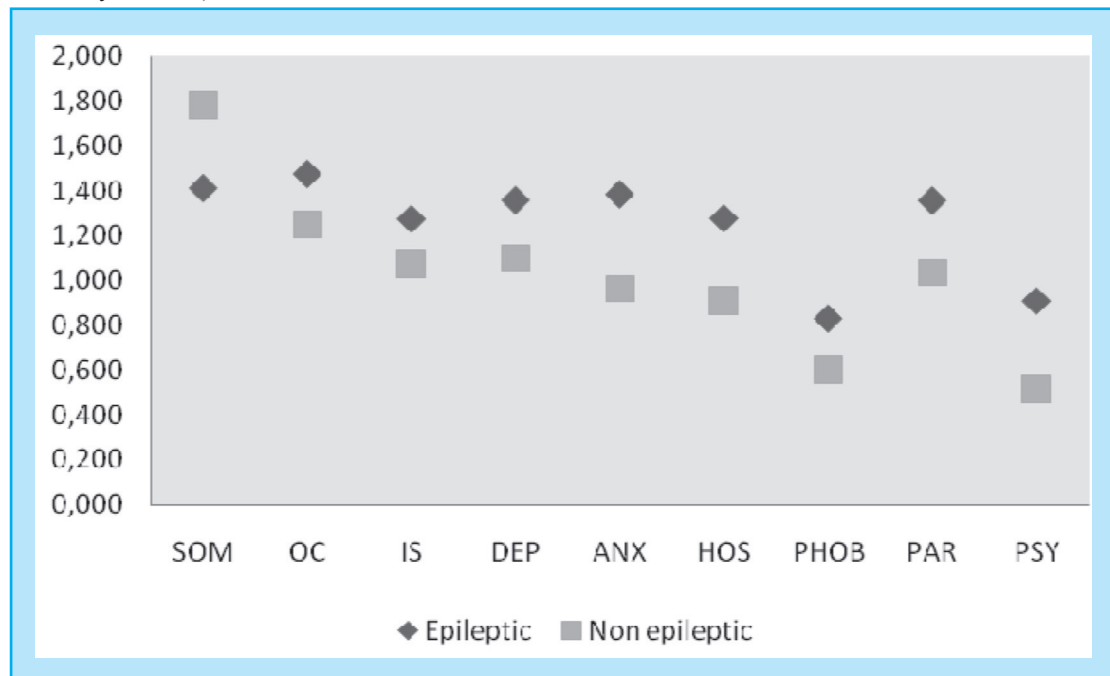
Figure 1 – Results from Physical self-concept scale (F1 – social acceptance; F2 – autoefficiency; F3 – psychological maturity; F4 – impulsivity)



among epileptic women, 71.4% referred that the pregnancy was desired but only 47.6% defined it as planned, numbers significantly lower than in the control group (100 and 65%, respectively). The

epilepsy interfered with pregnancy desire in 38.1% of women. Family members and family doctors agreed with the pregnancy in 90.5 and 71.4% of the cases, respectively.

Figure 2 – Results of the SCL 90-E (SOM – Somatization; O-C - Obsessive-Compulsive; INT - Interpersonal Sensitivity; DEP – Depression; ANX – Anxiety; HOS – Hostility; PHOB - Phobic-Anxiety; PAR - Paranoid Ideation; PSY – Psychoticism)



After analysing the 20 questions of the “Inventory of physical self-concept”, we found that the epileptic group had a worse self-concept of themselves in comparison with the non epileptic group (regarding the social acceptance, the auto-efficiency, the psychological maturity and the impulsivity), although this difference only achieved statistical significance ($p=0.01$) with the auto efficiency (Figure 1). These results were independent to AED medication from the epileptic women.

In relation to the SCL 90-E scale, our results show that excluding somatization, epileptic women had a greater tendency to have all the other psychopathological symptoms analysed through this inventory (obsessions-compulsions, interpersonal sensitivity, depression, anxiety, hostility, phobic-anxiety, paranoid ideation and psychoticism), although only the last one achieved statistical significance ($p=0.03$) – Figure 2. These results were also independent to AED medication from the epileptic women.

DISCUSSION

The diminutive number of studies about this problematic published made us think carefully about the findings we have documented and herein reported. The small numbers (groups of 21 and 40 patients) of this study don't allow making general conclusions or recommendations, but instead led us to some considerations exposed below.

Our data suggest a similar incidence of maternal and perinatal morbidities in epileptic pregnant women when compared to the general population. This may reflect an enhanced prenatal surveillance when compared to a similar study from 10 years ago¹¹ and is in accordance with others studies^{9,10}.

We also verified an improvement in folic acid intake in the preconceptional period, since 33.3% of the epileptic women in our study initiated at that time against none of the women included in the previous study¹¹.

As far as pregnancy desire and planning are concerned, we have observed that they are significantly lower in the epileptic population. There might be several hypothesis for this to happen such as fears of passing on the disease to their children, of malforma-

tion, and of possible side effects of both seizures and AED in the future child.

The main concerns of pregnant epileptic women are related with the consequences of both epilepsy and its therapy on the child. The level of reported pregnancy-related satisfaction is dependent on the absence of complications during its evolution (namely a normal ultrasound examination). Non-epileptic pregnant women are also worried about the normal development of their fetus. Their satisfaction is related to the first signs of life of the fetus, as well as their expectations about their child (gender, eye colour).

Regarding the physical self-concept evaluation, we found that the non-epileptic pregnant population had higher scores than the epileptic pregnant population. Besides a higher sensitivity that is common in all pregnant women, who see their own body transformed, the lower selfconcept of epileptic women might be explained by their frequent poor self-image, health problems, and insecurities. These differences are, however, statistically meaningful only with regard to auto-efficiency.

When applying the SCL-90, we also verified that the psychological and psychopathological aspects of the epileptic pregnant women were relevant, when compared with the non-epileptic pregnant ones. However, bibliography about epilepsy and pregnancy, concerning psychological and psychopathological evaluation of women during the gestation, is scarce.

The results we obtained were a little different from what we expected. Although these two groups of women might have psychopathology previous to pregnancy that we didn't know about, we had thought that there would be bigger psychopathological differences between them, considering the specific epileptic disease profile and its influence on the life and behaviour of the person who suffers it chronically. However, we observed that all pregnant women presented some levels of anxiety, mood changes and insecurity. It could be related with pregnancy fears and problems and with psychological changes that occur in this state. It is also our belief that in the epileptic pregnant woman, these features appear much more owing to their previous personality and the specific psychopathological characteristics of the epileptic

patient – they usually appear in women subject to frequent social and familiar pressures, which influence their behaviour from early on, increasing their fears in stressful events or in risky situations and leading them to worry about themselves, their health or their child to be. In our evaluation all of these focused items were a little more prevalent in the epileptic than in the control group, although, because of what we have just said, the psychoticism behaviour type was the only that demonstrated a meaningful statistically difference if we compare them to the non-epileptic pregnant population.

Previous education and information of epileptic women are of the greatest importance, so that pregnancy could develop favourably in obstetrical, neurological and psychological terms. So, it is our belief, and of most authors, that the planning of an eventual pregnancy must be promoted in order to stabilise epilepsy; monotherapy in the lower possible dosage should be used whenever possible^{1,2,3}. It is advisable to use adequate contraception while the disease is not balanced and a supplement of folic acid should be introduced two months before conception.

We must point out that the majority of these epileptic women were under non-hormonal contraceptive methods before pregnancy and only about half of them planned the pregnancy.

Both physicians and patients have a poor understanding of the safe use and efficacy of hormonal contraception. Careful patient management, including the use of increased estrogens doses (≥ 50 micrograms) in patients receiving enzyme-inducing AED, may further minimize the risk for unintended preg-

nancies. Increased awareness is needed to improve patient management.

Epileptic pregnant women must be always sent to a referral centre, where they can have access to a multidisciplinary team composed by specialists on Maternal-Fetal Medicine and Epilepsy, and to specific psychiatric support, so that their gestation might have a good outcome both in medical and psychiatric terms.

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