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Gender difference in management of epilepsy—what women are hearing

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This study reports the results of a questionnaire survey of female members of the British Epilepsy Association (BEA). The women were asked about their concerns about their epilepsy with respect to being female, and, in particular, asked about the information they had been given on important topics such as contraception and pregnancy. A questionnaire was sent to 6000 BEA female members of whom 1855 (31 %) replied. Forty-six percent of the women (mainly aged between 26 and 45) stated that they currently used some form of contraception. The most frequently used method was the condom (34 %). Twenty-two percent of the women using contraception were taking the oral contraceptive pill whilst a further 4 % were using a hormonal contraceptive injection. Fifty-one percent of the women aged between 16 and 55 claimed not to have received any advice about possible interactions between contraception and antiepileptic drug therapy. With regards to pregnancy, 34 % claimed they had not received any advice and 25 % had not discussed pregnancy with anyone. The women planning to have children over the subsequent 2 years received the greatest amount of advice about epilepsy and pregnancy, although 20 % still claimed not to have received any information. Thirty-four percent of the women in the study stated that they were either menopausal or post-menopausal. Twenty-nine percent of women who had taken hormone replacement therapy in the past reported an increase in seizure frequency compared with 18 % amongst current users. This survey has shown that women with epilepsy want, and need, more information and counselling about issues relating to contraception, pregnancy and the menopause.

Key words: epilepsy; women; pregnancy; contraception; menopause.

INTRODUCTION

Until recently, the management of patients with seizures took no account of gender, despite the fact that about 50 % of people with epilepsy are female. Epilepsy for a woman is not the same as epilepsy for a man. In particular, in women, epilepsy affects sexual development, sexuality, the menstrual cycle, aspects of contraception, fertility, the developing foetus and pregnancy, the mother–child relationship and the menopause, in ways that are unique to their sex. Therefore, the British Epilepsy Association (BEA) undertook a survey of its female members, asking about their concerns about their epilepsy with respect to being female, and in particular asking about the information they had received on important topics such as contraception and pregnancy.

MATERIALS AND METHODS

A questionnaire was designed in consultation with Taylor Nelson Sofres Healthcare, an independent market research agency, and was sent to 6000 BEA female members. Not all these women would have had epilepsy, some would have been carers, others friends, etc. Only females with epilepsy aged 16 or above were asked to fill in the questionnaire. This questionnaire was devised following qualitative research with women with epilepsy that was conducted by Taylor Nelson Sofres Healthcare.

RESULTS

Data in the study are based on the 1855 (31 %) questionnaires which were returned by the cut-off date for inclusion in the study.

Patient demographics

The age of the respondents is summarized in Table 1, their treatment in Table 2 and the length of time since onset of their epilepsy in Table 3.

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Table 1: Age of patients ($n = 1885$).

Under 16	27	(1 %)
16–25	260	(14 %)
26–35	497	(26 %)
36–45	419	(23 %)
46–55	385	(21 %)
Over 55	265	(14 %)
Not stated	2	

Table 2: Antiepileptic drug therapy ($n = 1885$).

Phenobarbitone	87	(5 %)
Phenytoin	300	(16 %)
Carbamazepine/Tegretol SR	835	(47 %)
Sodium valproate/Epilim retard	635	(32 %)
Lamotrigine	341	(18 %)
Gabapentin	111	(6 %)
Vigabatrin	78	(4 %)
Topiramate	77	(4 %)
Clobazam	130	(7 %)
Monotherapy	1102	(59 %)

Table 3: Length of time since diagnosis ($n = 1885$).

Age (years)	*n*	
<2	185	10%
3–5	251	13%
5–10	328	18%
11–20	459	25%
21–30	292	16%
31–40	197	11%
>40	80	4%

Of the women, 1276 (64 %) were of child-bearing age, i.e. between the ages of 16 and 45. The marital status of the respondents is summarized in Table 4. Eight hundred and eighty (47 %) women had had children: 292 (17 %) currently had children under the age 10.

One thousand and ninety-three (59 %) women were attending a hospital clinic for their epilepsy.

Contraception

Eight hundred and forty-seven (46 %) women (mainly aged between 26 and 45) stated that they currently used some form of contraception (Table 5). The most frequently used method was the condom (290 (34 %) of those using contraception). One hundred and eighty-nine (22 %) of the women using contraception were taking the oral contraceptive pill, whilst a further 40 (4 %) were using a hormonal contraceptive injection. Amongst the women using contraception, 83 (16 %) women on enzyme-inducing antiepileptic drugs were taking the oral contraceptive pill compared with 130 (27 %) on non-enzyme-inducing antiepileptic drug therapy.

General practitioners and hospital specialists were equally likely to provide information regarding contraception. However, 948 (51 %) women claimed not to have received any advice about possible interactions between contraception and antiepileptic drug therapy (Table 6).

Table 4: Marital Status ($n = 1885$).

Married/living with partner	1107	(60 %)
Single	531	(29 %)
Divorced/separated/widowed	184	(10 %)
Not stated	33	(2 %)

Table 5: Methods of contraception used by women using contraception ($n = 847$).

Condom	290	(34 %)
Oral contraceptive pill	189	(22 %)
IUD	77	(9 %)
Vasectomy	59	(7 %)
Tubal ligation/hysterectomy	81	(10 %)
Depot injection	40	(4 %)

Of those using the oral contraceptive pill ($n = 189$), 31 (16 %) claimed not to have been given any advice whilst 81 (43 %) of the women indicated they had been given information regarding reduced effectiveness of the contraceptive pill (Table 7). Sixty-nine women (37 %) on the oral contraceptive pill were taking an increased dose, and 32 (17 %) of these women stated that they were concerned about taking this higher dose. Eighty-nine (47 %) women taking the oral contraceptive pill felt that they had not been given enough information about the contraceptive pill and their medication.

Pregnancy

Eight hundred and eighty (47 %) of the women already had children, but one in 10 of these were planning to have further children. Overall, 441 (23 %) of the women were planning to have children, 169 (9 %) within the next 2 years (Table 8).

The women were asked about the advice they had received about pregnancy (Table 9). Six hundred and thirty-seven (34 %) claimed they had not received any advice and 459 (25 %) had not discussed pregnancy with anyone. Amongst those who had already had children, 232 (38 %) claimed not to have received any advice about pregnancy and epilepsy and only 210 (24 %) had discussed the issues with a doctor before conception. The women planning to have children over the subsequent 2 years received the greatest amount of advice about epilepsy and pregnancy, although 34 (20 %) still claimed not to have received any advice. Many women intending to have children in the next 2 years felt they still had unanswered questions relating to their epilepsy and pregnancy and subsequent care of the child (Table 10). The best informed group comprised those women who had already had children and planned to have more.

Table 6: Advice about contraception given to women.

Advice	All women ($n = 1885$)	Women using contraception ($n = 847$)
Advised not to take oral contraceptive pill	316 (17 %)	68 (8 %)
Told about reduced efficacy of oral contraceptive pill	490 (26 %)	218 (26 %)
Told that a higher dose oral contraceptive pill was required	97 (5 %)	67 (8 %)
Told current medication may limit effectiveness of oral contraceptive pill	135 (7 %)	118 (14 %)
Told to take additional contraception precautions	20 (1 %)	16 (2 %)
No advice given	948 (51 %)	207 (24 %)

Table 7: Advice about the oral contraceptive pill given to women taking the oral contraceptive pill.

Advice	All women on oral contraceptive pill ($n = 189$)	Women taking enzyme inducing antiepileptic drugs ($n = 83$)
Told about reduced efficacy of oral contraceptive pill	81 (43 %)	48 (58 %)
Told that a higher dose oral contraceptive pill was required	34 (18 %)	21 (25 %)
Told current medication may limit effectiveness of oral contraceptive pill	41 (22 %)	24 (29 %)
Told to take additional contraception precautions	7 (4 %)	9 (11 %)
No advice given	31 (16 %)	9 (11 %)

Table 8: Women's intentions about children ($n = 1885$).

Already have children	880	(45 %)
Planning to have (more) children		
in next 2 years	169	(9 %)
in >2 years	272	(14 %)
Not planning to have children	496	(26 %)
Not stated	145	(8 %)

In the main, advice was given by hospital specialists (Table 11). Fifty-eight percent of the women receiving advice stated that this was their main source of information. General practitioners were mentioned by a third. Of all the women who received advice, 17 % were advised by the BEA (which might be expected in this group of BEA members).

Overall, the women felt there was a need for more information about epilepsy and pregnancy.

Menopause

Six hundred and twenty (34 %) of the women in the study stated that they were either menopausal or post-menopausal. One hundred and eighty-eight (30 %) menopausal and post-menopausal women were currently taking hormone replacement therapy (HRT). A further 97 (16 %) of the women had taken hormone replacement therapy in the past.

Twenty-eight (29 %) women who had taken hormone replacement therapy in the past reported an increase in seizure frequency compared with 33 (18 %) amongst current users (Table 12).

DISCUSSION

Although a large number of women returned the questionnaire, they were not wholly representative of women with epilepsy. The women respondents tended to have had a more severe seizure disorder in that only 34 % had well-controlled epilepsy. Community-based audit studies of epilepsy suggest that about 60 % of women with a history of epilepsy are in remission and are seizure-free[1,2]. Fifty-nine percent of the women who returned the questionnaire were currently being followed-up in a hospital outpatient clinic compared with 48 % from a recent community study[1]. Despite this, many women in this study had received what they perceived to be inadequate or no information about contraception or pregnancy in connection with their seizure disorder. These are obviously issues of considerable importance to women of childbearing age.

Despite knowledge for many years that the interactions between the combined oral contraceptive pill and enzyme-inducing antiepileptic drugs can lead to contraceptive failure, many doctors seem unaware of the need to increase the dose of the contraceptive pill when such drugs are prescribed together. A recent survey in the USA showed that less than half of the neurologists and obstetricians who replied knew that changes in the dose of oral contraceptive pill might be indicated when prescribing antiepileptic drugs in addition to an oral contraceptive pill. Only 4 % of neurologists and none of the obstetricians were correct in identifying the interactions between the combined oral contraceptive pill and phenytoin, carbamazepine, sodium valproate, phenobarbitone, primidone and ethosuximide. Not surprisingly, 27 % of neurologists and 21 % of obstetricians reported contraceptive failures amongst their patients taking antiepileptic drugs[3].

In the last decade there have been several advances in the management of women with epilepsy who wish to have children. The most important of these has been the advent of pre-conception counselling. It is recognized that about 1 in 10 people labelled as having a seizure disorder is incorrectly diagnosed. So when a woman with epilepsy first sees a doctor to discuss starting a family, it is important (as at other times) to reconsider the diagnosis and to review drug therapy.

Table 9: Advice given about pregnancy and epilepsy.

	All women	Women with children	Plan to have children in	
			next 2 yrs	>2 yrs
	($n = 1855$)	($n = 880$)	($n = 169$)	($n = 272$)
No advice	637 (34 %)	332 (38 %)	34 (20 %)	61 (22 %)
Not discussed with anyone	459 (25 %)	153 (17 %)	11 (7 %)	103 (38 %)
Any mention of the effects of				
Medication	439 (23 %)	100 (11 %)	56 (33 %)	67 (25 %)
Teratogenicity	149 (7 %)	51 (5 %)	24 (15 %)	23 (12 %)
Other advice				
To discuss with a doctor	158 (9 %)	34 (4 %)	31 (18 %)	58 (21 %)
Prepregnancy counselling	105 (6 %)	21 (2 %)	17 (10 %)	41 (15 %)
Folic acid supplements	87 (5 %)	42 (5 %)	34 (20 %)	22 (8 %)
Need for extra monitoring	26 (1 %)	14 (2 %)	8 (5 %)	5 (2 %)

Table 10: Concerns about pregnancy and childcare of women intending to have children in the subsequent 2 years.

	No previous children	Previous children
	($n = 117$)	($n = 52$)
Not given enough information	64 (55 %)	15 (28 %)
Unanswered questions about breast-feeding	68 (58 %)	22 (42 %)
Worried about effects of medication on unborn child	90 (77 %)	35 (68 %)
Anxious about increased seizures whilst pregnant	75 (64 %)	29 (56 %)
Worried about not being able to look after the child(ren) properly	33 (28 %)	7 (14 %)
Worried about whether they were able to have children because of epilepsy	28 (24 %)	7 (14 %)
Worried that their medication might affect their ability to have children	47 (40 %)	13 (25 %)

Table 11: Sources of advice.

	All women	Women with children	Women planning to have a child in next 2 years
	($n = 1885$)	($n = 880$)	($n = 169$)
Hospital specialist	435 (23 %)	197 (22 %)	92 (54 %)
General practitioner	249 (13 %)	134 (15 %)	53 (31 %)
British Epilepsy Association	121 (7 %)	52 (6 %)	19 (11 %)
Friend/relative	31 (2 %)	9 (1 %)	2 (1 %)
Nurse	21 (1 %)	10 (1 %)	6 (4 %)
Media	20 (1 %)	6 (1 %)	2 (1 %)
Library	14 (1 %)	4 (0.5 %)	1 (0.5 %)
Found out own information	7 (0.5 %)	4 (0.5 %)	1 (0.5 %)

Table 12: Changes in seizure frequency amongst menopausal and post-menopausal women.

Frequency of seizures	Current users of HRT	Past users of HRT	Not used HRT
	($n = 188$)	($n = 97$)	($n = 335$)
More frequent	33 (18 %)	28 (29 %)	51 (15 %)
Unchanged	54 (29 %)	28 (29 %)	57 (17 %)
Less frequent	39 (21 %)	12 (12 %)	76 (23 %)
Not stated	62 (33 %)	29 (30 %)	151 (45 %)

One of the more important issues is that of antiepileptic drug therapy. The risk of foetal malformation is increased if a woman is on polytherapy, particularly if sodium valproate is part of the combination. The aim of drug therapy is to put the woman on the lowest possible dosage of the most appropriate drug that will control her seizures. All the older antiepileptic drugs (carbamazepine, sodium valproate, phenytoin and barbiturates) are teratogenic in both humans and animals, showing similar patterns of malformation. Some of the newer antiepileptic drugs such as lamotrigine, gabapentin and tiagabine do not appear to be teratogenic in animal studies, so in the future, these may be the therapies of choice for women of childbearing age[4]. Data are currently being collected about newer antiepileptic drugs and their safety in pregnancy[5].

The genetics of the seizure disorder, breast-feeding and issues of child care and epilepsy need to be discussed. High dose folate supplements (5 mg) for 1 month before, and for the first 3 months of pregnancy are recommended for women with epilepsy as there is a high risk of spina bifida in the foetus exposed to carbamazepine or sodium valproate[4]. Very few of the women respondents were aware of the need to take folic acid before, and for the first 3 months after conception.

Over half the women who returned the questionnaire felt that they had not been provided with enough information about pregnancy; in particular, few had received information about teratogenicity of antiepileptic drugs or the need for pre-conception counselling.

There is very little information about epilepsy and the menopause. In this study, in about a fifth of menopausal and post-menopausal women, seizures became less frequent. There are also scanty data relating to women with epilepsy and HRT. Theoretically, treatment with

oestrogens may increase seizure frequency in some women with epilepsy[6]. The data from this study would support this in that compared with women who had not taken HRT, double the number of past users of HRT reported an increase in seizure frequency at the menopause. On the other hand, treatment with enzyme-inducing antiepileptic drugs predisposes towards osteoporosis and osteomalacia. An increased incidence of fractures has been reported, both related and unrelated to seizures[7]. It therefore seems sensible for a menopausal woman to try HRT, but with the warning that the HRT may exacerbate her seizure disorder. This is an area which needs further research.

This study has shown that women with epilepsy want, and need, far more information and counselling about contraception, pregnancy and the menopause.

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CONFLICT OF INTEREST

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