

SEXUAL BEHAVIOUR, A STRESS FACTOR AFFECTING OVULATION AND CYCLE LENGTH

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Summary: The hormonal profile and clinical picture of women, mean age 21 years, with aberrant anovulatory cycles, lasting from 35-65 days were presented. Although all subjects had orgasmic experiences by automanipulation, and 4 had sporadic sex with men, the fact of not having regular heterosexual relationship, acts as an emotional stress, with resulting higher PRL and urinary catecholamine level, as compared to an age-matched control group of 14 women, having regular 1-2 weekly coitus. Sexual behaviour affects cycle length and ovulation, having no effect on estradiol level. Menstrual disorders and aberrant long cycles, resulting from absence of or sporadic sexual encounters should not be treated. They are a temporary phenomenon, which disappears after establishment of normal heterosexual life-style.

It is well known that the menstrual cycle involves a complex of positive and negative feedbacks, reciprocal neuro-endocrinologic reactions, that affect ovulation and menstruation. The principal parts of the complex are the hypothalamus, pituitary and ovary.

Socio-emotional stress can lead to cycle aberrances and anovulation, disturbing the normal function of the complex^(1, 2). Such a stress factor can be a sexual behaviour characterized by absence of or sporadic sex with men. The aim of the present paper was to prove this.

POPULATION AND METHODS

Twelve sexually mature women 17-28 years old (mean 21 years) participated in our study, their main complaint being periods of secondary amenorrhea, lasting from 35-65 days, responding well to gestagens by withdrawal bleeding. In private interviews, after excluding organic causes, all subjects acknowledged having orgasmic experiences by automanipulation of the clitoral glans or by stimulation of the entire mons. Four had sporadic sex with men. As controls we used a group of 14 women, 18-32 years old (mean 21.85 years) having a regular heterosexual life-style, coitus 1-2 a week, and a cycle length of 27-30 days. The following parameters were assessed: Urinary LH for ovulation timing and

detection, by a method described by Blum *et al.*^(3, 4). Prolactin (PRL) by a commercial kit, normal ranges for our laboratory being 5-20 ngr/ml. Estradiol (E₂) was determined in the follicular phase using a Pantex direct E₂ Kit (Pantex, Santa Monica, California).

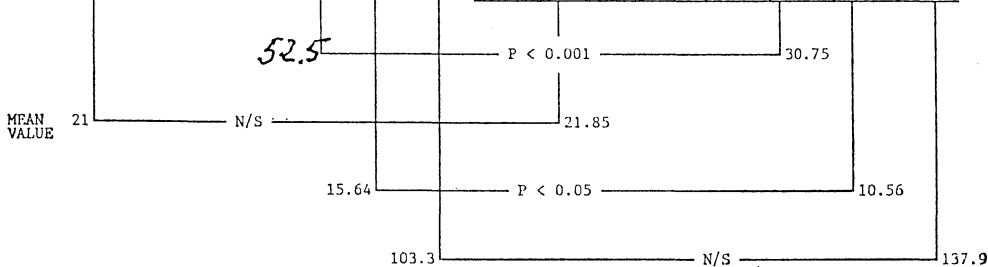
Free urinary catecholamines were determined by isolation of catecholamines on a specially prepared ion-exchange resin column and the fluorometric detection by the classic trihydroxyindole reaction, using a kit from Bio-Rad. The normal range in our laboratories is 41-115 mgr/24 h.

RESULTS

The results are shown in table 1. From the table it is seen that although the two groups of women were of comparable age, 10 (83.33%) out of 12 were anovulatory, and in the control group with regular heterosexual relationships, all had ovulatory cycles. This finding was strongly correlated with higher PRL levels, a mean of 15.64 ngr/ml, versus only 10.56 ngr/ml in the control group ($P < 0.05$), and a statistically significant ($P < 0.001$) higher catecholamine level (52.2 mg/24h VS 30.75 MS/24h). We did not find any statistical difference in E₂ level, in either group. Statistical analysis was performed by the Student T test.

TABLE 1. — Table of subjects and control group and their data.

SUBJECT	AGE	CYCLE LENGTH	SEX BEH.	OVULA- TION	CAT. 24/24H	PRL NGR/ML	E2 PG/ML	CONTROL	AGE	CYCLE LENGTH	HETERO SEX BEH.	OVULA- TION	CAT. MG/24H	PRL NGR/ML	E2 PG/ML
1	17	50-54	N	-	40	10.8	26.2	1	22	28	2 x WE	+	30	13.2	174.9
2	27	40-60	S	-	45	21.4	37.0	2	22	29	1 x WE	+	20	19.3	100.0
3	21	45	S	+	70	11.5	274.4	3	22	29	2 x WE	+	20	11.2	189.8
4	18	60	N	-	60	15.0	66.0	4	22	28	2 x WE	+	15	13.5	106.0
5	22	40-50	N	-	45	25.9	70.8	5	19	29	2 x WE	+	40	13.8	150.2
6	22	35-45	N	+	60	11.6	291.1	6	25	30	1 x WE	+	20	8.2	185.2
7	18	50-60	N	-	35	15.0	65.2	7	18	27	1 x WE	+	25	8.3	156.0
8	17	45-60	N	-	40	19.2	26.0	8	21	28	1 x WE	+	50	21.4	99.7
9	28	35-45	S	+	50	8.8	262.0	9	18	29	1 x WE	+	40	13.8	70.3
10	21	45-65	N	-	50	10.8	18.0	10	21	27	1 x WE	+	30	6.2	67.0
11	17	45-60	N	-	70	26.0	26.0	11	21	29	2 x WE	+	24	3.3	87.7
12	24	40-60	S	-	65	18.9	77.0	12	21	28	2 x WE	+	18	11.5	146.9
								13	22	29	1 x WE	+	50	8.2	198.0
								14	32	28	1 x WE	+	48	7.0	200.5



S = Sporadic sex; N = Never sex; NS = Non Significant.

DISCUSSION

The results from the above study, point to a strong correlation between sexual behaviour, which can be considered a stress factor, anovulation, aberrant cycles, and high PRL and catecholamine level.

Although all subjects in the study group had orgasmic experiences by automanipulation, and four, sporadic sex with men, such behaviour was not able to induce regular ovulatory menstrual cycles. Our findings are in accordance with Cutler *et al.* (^{5,6}). However, in contradiction to their studies, we could not find any difference in E₂ level, in the study group compared to the control group.

The lack of regular heterosexual behaviour acts as a socio-emotional stress, af-

flecting the normal activity of the hypothalamo-pituitary-ovarian complex.

It is known that an alteration of central catecholamine function may be causative in the development of a cyclicity in subjects with stress induced hypothalamic chronic anovulation linked with depression of LH - RH (²).

Another aspect of stress and amenorrhea can be found in the relationship stress - hyperprolactinemia. High PRL concentration, suppresses hormonal follicular steroidogenetic response to gonadotropins and by suppressing gonadotropins (^{7,8}). In philosophy and medicine (⁹) sexuality is considered both psychic and behavioral, anatomical and social, an instrument of pleasure reproduction and love.

Lack of heterosexual relationship or even sporadic sex with men, is a stress factor which leads to menstrual disorders, anovulation and aberrant cycles lengths. It is a temporary phase, which most women pass through in their life - no hormonal treatment is indicated, since regular sexual behaviour once established will lead to a normal function of the hypothalamo-hypophyseal-ovarian complex.

Long lasting amenorrhea can be per se a stress factor. In such cases a treatment with progyluton (from Schering Berlin) in the drug of choice.

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