MOOD PARAMETERS AND SEVERE PHYSICAL SYMPTOMS OF THE FEMALE REPRODUCTIVE CYCLE

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HANGULATI PARAMÉTEREK ÉS SÚLYOS FIZIKAI TÜNETEK ÖSSZEFÜGGÉSE A NŐI REPRODUKTÍV CIKLUS SORÁN

Célkitűzés. A fizikai és pszichés jelenségek fluktuációja a humán női reproduktív működés ciklikus jellegének természetes velejárója. Ezen változások természetét azonban még nem értjük pontosan. Kutatásunk célja a pszichés és fizikai tünetek fluktuációjának vizsgálata volt a női reproduktív ciklus során pszichiátriailag egészséges, PMDD-ben (premenstrual dysphoric disorder, premenstruális diszfóriás zavar) nem szenvedő nők esetében.

Módszer. A vizsgálatban 63 pszichiátriailag egészséges, PMDD-ben nem szenvedő nő vett részt. A vizsgálat résztvevői esetében a menstruációs ciklus szabályos volt és egyikük sem alkalmazott hormonális fogamzásgátló módszert. A résztvevők három egymást követő ciklus során minden este kitöltötték a PRISM naptárt, valamint az első ciklus három előre meghatározott napján számos egyéb pszichometriai skálát (SCL-51, STAI, ZSDS, EAT, Énkép-Testkép Skála). A résztvevőket a PRISM skála alapján számított, késő follikuláris és késő luteális fázis közötti legalább 66% fizikai tünet súlyosság fokozódás alapján két csoportba soroltuk: LPPS (luteal phase physical symptoms, késő luteális fázisra jellemző fizikai tünetek) és nonLPPS (no luteal phase physical symptoms, késő luteális fázisra nem jellemzőek a fizikai tünetek). A két csoport esetében összehasonlítottuk a három előre meghatározott időpontban felvett pszichometriai tesztek átlagpontszámát.

Eredmények. A két csoport között csak az SCL-51 Interperszonális érzékenység alskálája esetében tapasztaltunk szignifikáns különbséget.

Következtetés. Eredményeink arra utalnak, hogy a női reproduktív ciklus késő luteális fázisában a fizikai tünetek megjelenését nem kíséri automatikusan a pszichés tünetek súlyosbodása. A női reproduktív ciklus késő luteális fázisára jellemző fokozott pszichés tünetképzés hátterében a súlyos fizikai tünetektől független okok állhatnak.

KULCSSZAVAK: reproduktív ciklus, depresszió, szorongás, premenstruális szindróma

SUMMARY

Objective. The cyclic variation of physical and psychological phenomena has been accepted as a natural consequence of the cyclicity of the human female reproductive function. The exact nature of theses changes, however, has not been fully understood. The aim of our study was to investigate the fluctuation of psychological and physical symptoms throughout the female reproductive cycle in healthy, non-PMDD women.

Method. 63 psychiatrically healthy, non-PMDD women with normal regular menstrual cycles and not using hormonal contraceptive methods participated in the study. Participants completed the PRISM calendar every night for three consecutive cycles and on three predefined days of the first cycle they completed several other psychometric measures (SCL-51, STAI, ZSDS, EAT and Mind and Body Cathexis Scale). Based on an at least 66% increase in physical symptoms from the late follicular to the late luteal phase on

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the PRISM, subjects were assigned to LPPS (luteal phase physical symptoms) and nonLPPS (no luteal phase physical symptoms) groups. Psychometric scores obtained at the three predefined days were compared between the two groups.
Results. There was a significant difference between the two groups only in case of the interpersonal sensitivity subscale of the SCL-51.
Conclusion: Our results indicate that the appearance of severe physical symptoms in the late luteal phase of the female reproductive cycle is not accompanied by a worsening of psychological symptoms. The appearance of enhanced psychological symptomatology attributed to the luteal phase of the female reproductive cycle thus seems to be independent of the appearance of severe physical symptoms.
KEYWORDS: reproductive cycle, depression, anxiety, premenstrual syndrome

INTRODUCTION

The cyclic oscillation of the female reproductive cycle is a natural phenomenon of human physiology, and this cyclic hormonal variation is accompanied by the fluctuation of several physical and psychological phenomena. These changes can be manifested in different extent, form and severity and in some cases it seriously influences everyday well-being and functioning. Although in the majority of women, these symptoms do not reach the level of clinical diagnosis, they still exert a significant influence over life.

Premenstrual symptomatology can be manifested in several forms. Premenstrual syndrome in general is defined as such physiological, psychological and behavioural changes that frequently occur in the luteal phase of the female reproductive cycle causing distress and which are serious enough to disturb everyday activity or interpersonal relationships (Freeman 2003; Halbreich 2003; Reid and Fretts 1995). There are different estimations concerning the frequency of premenstrual syndrome (PMS). Some authors estimate that it affects about 30% of women. However, it's more severe form, premenstrual dysphoric disorder (PMDD) affects an additional 5-7% (Halbreich et al 1985; Reid and Fretts 1995), while significant and noticeable premenstrual symptomatology, which does not reach diagnostic criteria but causes changes in everyday well being affect an additional portion of women. So some authors say that nearly 70% of women experience some type of premenstrual symptomatology which negatively influences their everyday activities (Halbreich et al 2003; Reid and Fretts 1995; Reid and Yen 1981).

Most of the studies concerning the changes accompanying the reproductive cycle and related to premenstrual symptomatology were carried out with patient samples meeting diagnostic criteria for premenstrual syndrome or premenstrual dysphoric disorder. Less attention was paid to the investigation of these changes in healthy women who do not meet diagnostic criteria for the above disorders and for any psychiatric illnesses, although a great portion of these women experiences cycle-related changes. The aim of our study was to investigate the fluctuation physical symptoms throughout the female reproductive cycle in healthy, non-PMDD women and the association of this with psychological characteristics. We studied whether there is a substantial difference in average mood parameters in psychiatrically healthy women who experience severe worsening of physiological symptoms in the late luteal phase of the reproductive cycle.

METHODS

63 healthy women were included in our sample. The participants were aged between 18 and 45 years, with a mean age of 26.73±0.66 years. All participants went through thorough physical and psychiatric examination, and only healthy subjects were included in the sample. None of our participants met DSM-IV criteria for PMDD, and none of the participants were using a hormonal contraceptive method. All participants had normal, regular menstrual cycles with cycle length between 26-34 days. The average cycle length was 28.35±0.28 days.

The investigation was carried out in accordance with the latest version of the Declaration of Helsinki. The study was approved by the Scientific and Research Ethics Committee of Scientific Health Council in charge of experimentation with human subjects. All subjects were given thorough explanation of the procedures of the study and all

participants gave informed consent before participating in the study.

The participants completed the PRISM (Prospective Record of the Impact and Severity of Menstrual Symptoms) calendar (Reid and Fretts 1995) to assess the fluctuation of everyday psychological and physical symptoms throughout the reproductive cycle. This questionnaire measures general symptoms associated with the premenstrual syndrome, including physical and psychological symptoms (such as restlessness, anxiety, insomnia, headache, nausea, etc) as well as their impact on everyday life (aggression, desire to be alone, etc). Participants filled out the PRISM calendar every night through three consecutive menstrual cycles. Since the cycle length of participants in the study differed, scores in case of each participant were transformed to a 28 year cycle keeping in mind the different phases of the cycle. Late luteal phase PRISM score was calculated based on the last 7 days of the cycle (7 days preceding the onset of the next menstruation), late follicular phase scores were based on the 7 days between 21-14 days before the onset of the next menstruation, while early follicular phase scores were calculated based on the first 7 days after the onset of menstruation.

The sample was divided according to the increase in symptom severity from the late follicular phase to the late luteal phase based on the average of PRISM calendar recordings related to physical symptoms throughout the three months. We established the median for increase in physical symptom severity in the sample. Subjects showing a 66% or greater increase in physical symptom severity were assigned to the LPPS group, whereas subjects with less than 66% increase in symptom severity were assigned to the non-LPPS group.

In addition, in three predefined occasions during the first cycle subjects completed several other psychometric tests assessing their psychological well-being. The occasions were 2-3 days after the onset of menstruation (early follicular phase); 8-10 days after the beginning of the cycle (late follicular phase) and 3-4 days before the expected beginning of the next cycle (late luteal phase). The tests completed three times were: State anxiety scale of the STAI (Sipos et al 1998; Spielberger 1970), SCL-51 (Symptom Distress Checklist, Derogatis et al 1970; Hajnal et al 1982), the Zung Self-Rating Depression Scale (ZSDS, Simon 1998; Zung 1965), and Self-cathexis and Body-cathexis Scale (Lukacs and Pressing 1998; Secord and Jourard 1953) and the Eating Attitude Test (EAT, Garfinkel and Newman 2001). The instructions in case of all these questionnaires were modified to ask about symptoms and phenomena in the previous week.

We compared the average of the psychometric scores obtained at the three predefined phases of the cycle in case of the two groups (late luteal phase physical symptoms-LPPS and non late luteal phase physical symptoms-nonLPPS) using ANOVA.

RESULTS

In the sample 32 (50.79%) subjects had a 66% or higher increase in their physical PRISM score from the follicular phase to the luteal phase and were thus assigned to the late luteal phase physical symptoms (LPPS) group while 31 subjects were assigned to the no late luteal phase physical symptoms (non-LPPS group). Ages of the subjects in the two groups did not differ (26.73±0.6640 years in the whole sample, 26.28± 0.7845 years in the LPPS group and 27.19±1.0870 years in the non-LPPS group).

PRISM grouping had a significant effect on the Interpersonal sensitivity subscale of the SCL 51 where women in the nonLPPS group scored significantly higher ($F_{1,61}$=5.2981, p=0.0248). There was no significant difference between the two groups in case of any other scales.

DISCUSSION

Generally it is assumed and it has also been demonstrated in some studies that women more prone to premenstrual symptoms exhibit distinct psychological characteristics as well, and not only in the luteal phase, but also as a trait characteristic throughout the whole reproductive cycle (Freeman et al 1995; Ross et al 2001). In our present study we found no significant differences in the average mood ratings of women who suffer from more severe physical symptoms in the late luteal phase of the cycle and of those who don't. However, in contrast to previous studies, in our present experiment we investigated healthy women, who do not meet diagnostic criteria for any menstrual cycle related psychiatric disorders. Therefore our results indicate that in contrast to women who meet diagnostic criteria for PMS and PMDD, healthy women experiencing more severe physi-

Figure 1. STAI State Anxiety scores in the LPPS and nonLPPS groups

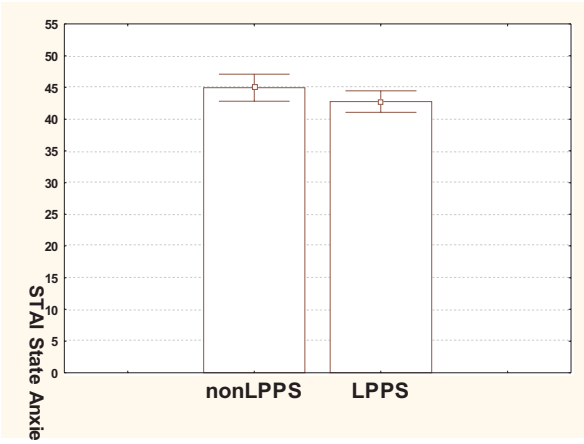


Figure 2. EAT (Eating Attitude Test) scores in the LPPS and nonLPPS groups

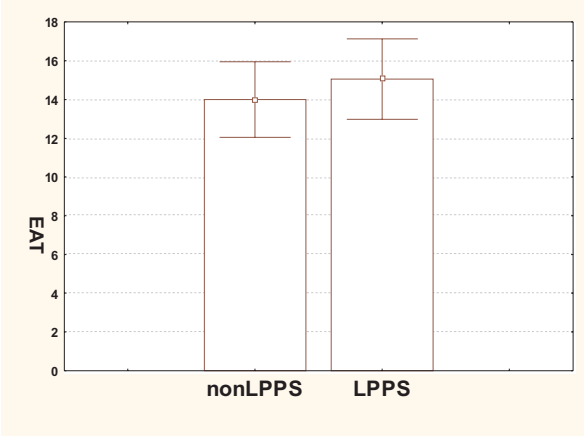


Figure 3. SCL 51 Somatisation scores in the LPPS and nonLPPS groups

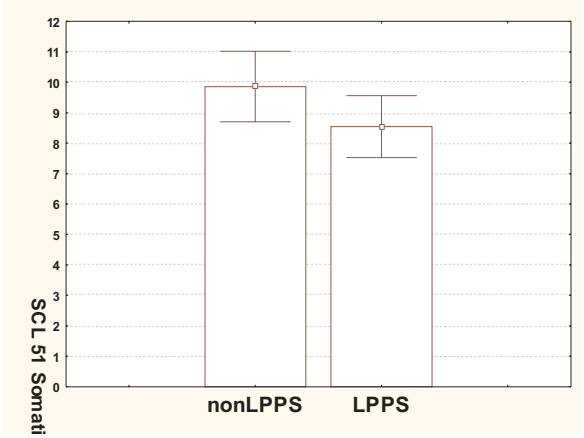


Figure 4. SCL 51 Anxiety scores in the LPPS and nonLPPS groups

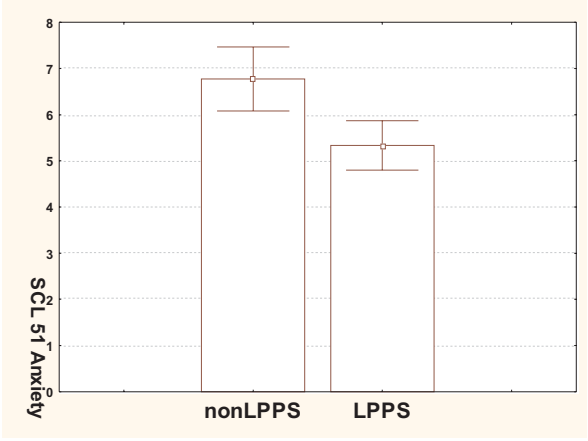


Figure 5. SCL 51 Depression scores in the LPPS and nonLPPS groups

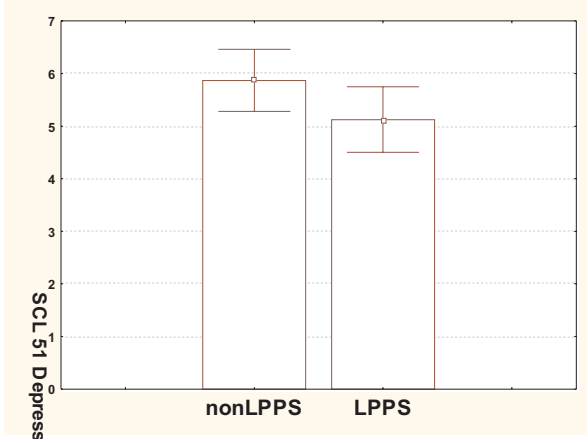
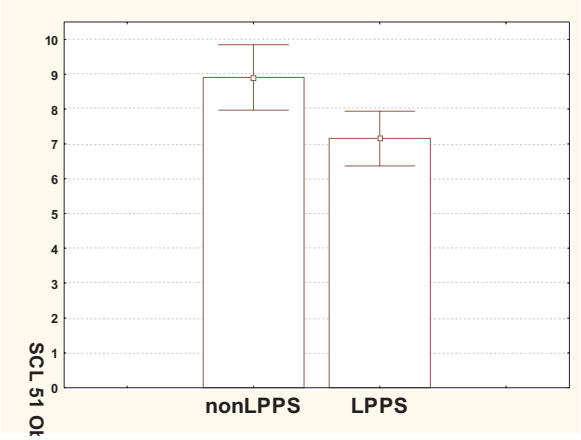


Figure 6. SCL 51 Obsessive-compulsive scores in the LPPS and nonLPPS groups



cal symptoms in the late luteal phase of the menstrual cycle do not exhibit more severe psychological symptoms compared to women without severe luteal phase physical symptomatology. We suggest that PMS or PMDD develops in those cases where psychological capacities don't allow for coping with the distress resulting from experiencing severe physical symptomatology in the late luteal phase of the reproductive cycle.

The only significant difference between women who experience more severe physical symptomatology in the late luteal phase and those who don't emerged in case of the Interpersonal sensitivity subscale of the SCL 51. In this case, con-

Figure 7. SCL 51 Interpersonal Sensitivity scores in the LPPS and nonLPPS groups

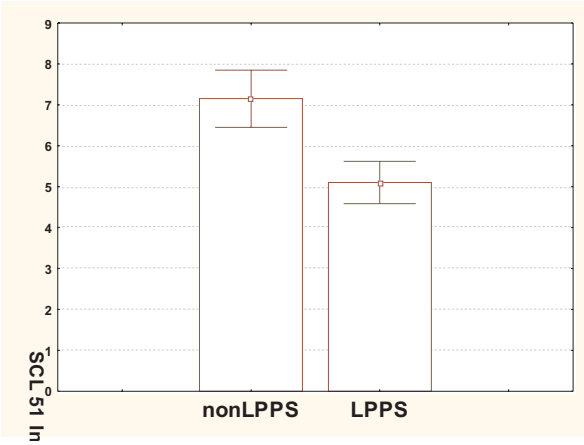
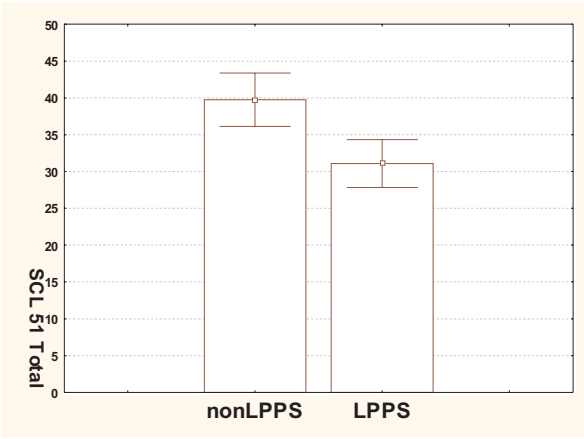
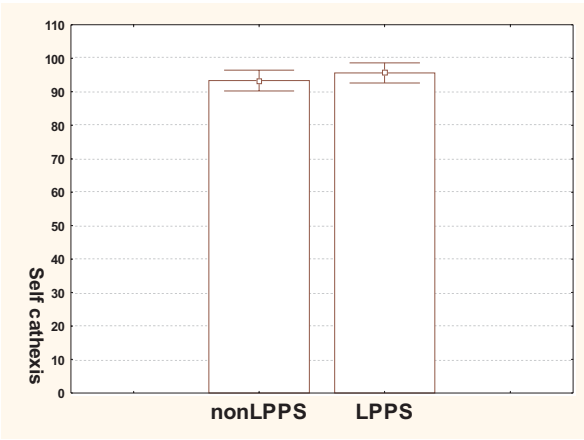


Figure 8. SCL 51 Total scores in the LPPS and nonLPPS groups



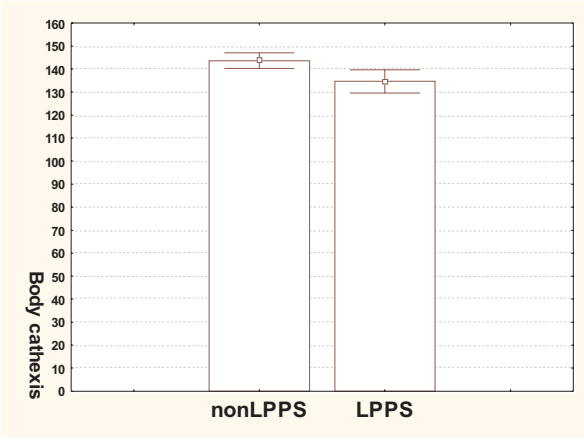
*p<0.05 compared to the LPPS group

Figure 9. Self cathexis scores in the LPPS and nonLPPS groups



trary to our expectations, women who do not experience a more marked increase in physical symptoms towards the end of the menstrual cycle exhibited a significantly higher score. It is likely

Figure 10. Body cathexis scores in the LPPS and nonLPPS groups



that this result is again due to the fact that we investigated a psychiatrically healthy population and excluded women with PMS and PMDD. Women who experience a serious fluctuation of physical symptoms throughout the reproductive cycle and exhibit increased interpersonal sensitivity are probably prone to manifest a more serious form of premenstrual phase-related mood symptomatology and would therefore possibly meet diagnostic criteria for either PMS or PMDD.

Our study sheds important light on the psychological side of the female reproductive cycle, and indicate that changes that occur parallel to the cyclic oscillations of reproductive hormone levels are natural and prevalent in the healthy population. Depending on psychological characteristics and coping abilities, menstrual cycle-related changes may manifest in diagnosable psychopathology. In the majority of cases, however, psychological factors allow for coping with perceived stress arising from the occurrence of physical symptoms and thus prevent the occurrence of diagnosable menstrual cycle related psychiatric disorders such as PMS or PMDD.

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Felhívás

Tisztelt Olvasóink!

Kérjük, hogy postai címváltozásaikat folyamatosan tudassák szerkesztőségünkkel. Kérjük továbbá, hogy pszichiáter vagy pszichiáter rezidens illetve neurológus kollégák – akik érdeklődnek a neuropszichofarmakológia iránt és rendszeresen szeretnék olvasni a Neuropsychopharmacologia Hungarica folyóiratunkat – címét küldjék vagy küldessék el Szerkesztőségünkbe, hogy küldési címlistánk állandóan aktuális legyen.

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