Use Of Neurological Rating Scales In The Study Of Pain Symptoms In Salpingoophoritis Complicated With Chronic Pelvic Pain Syndrome.

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ABSTRACT

We used neurological rating scales to teach patients to self-report pain symptoms in salpingo-oophoritis complicated by chronic pelvic pain syndrome. The results obtained were recommended for the study of clinical symptoms of salpingo-oophoritis complicated by chronic pelvic pain syndrome.

Keywords: neurological rating scales, pelvic pain syndrome

In practical gynecology, chronic pelvic pain (CHPN)is diagnosed in 25-27% of fertile patients [10]. According to the European Union in 2004, STO was diagnosed in 19% of the adult population [7]. In the same year, the incidence of this pathology in women over 25 years of age in the UK reached 14.8% [3], in New Zealand, 2/3 of fertile women have CHPN, a quarter of whom suffer from this disease. pains not associated with menstruation and intercourse, the rest have an uncertain diagnosis [8]. CHPN is common in all racial and ethnic groups, diagnosed in 5-50% of the population, which is partly due to neuropathic hypersensitivity mechanisms due to chronic tuberculosis infections [21, 31]. Thus, interstitial cystitis is diagnosed in 90% of women with tuberculosis, in whom it is accompanied by fibromyalgia, chronic fatigue syndrome, and irritable bowel syndrome, confirming a single onset of pain pathogenesis [30].

In gynecology, the main etiology of chronic pelvic pain syndrome(CHPPS) is varicose veins of the pelvic organs in 40% of patients and endometriosis in 25% of cases [67, 123-128; 68, 221-228]. In patients with CHPPS, chronic salpingooforitis (CHSO) is diagnosed in 10-15%, uterine fibroids - in 10-12%, algomenorrhea and ovarian cysts - in 6%, but the true diagnosis is made only in 2% [1, 23].

In women, venous congestion of the small pelvis causes hemodynamic disturbances in the nerve endings, disrupts their function, which leads to the addition of neurogenic pain [15], in most of which it is the result of acute or chronic vomiting. [18].

Some patients with CHSO complain of renal colic, back pain at the level of the ThX - LI vertebrae, they are sent from doctor to doctor, but the correct diagnosis is made too late, if it occurs at all, which significantly delays the onset of pathogenetic therapy [9].

Pain in the vagina and/or external genitalia is caused by infection, childbirth or surgical trauma, therefore, as a measure to prevent inflammation in the pelvic cavity with the formation of CHPPS, infectious etiology should be excluded. In 2008, among women born with CHPPS in Australia, dysmenorrhea was

detected in 71%, dyspareunia in 14%, and undiagnosed in 21.5% [27]. CHPPS can be caused by 27% of laparoscopic interventions and 15% of hysterectomy [24].

Pelvic floor dysfunction, which involves trigger points in the abdominal, gluteal or piriformis muscles, is accompanied by the formation of muscle-tonic abnormalities - constant tension in the muscles of the back and lower back, impaired posture and biomechanics of the spine, "pudendal compression neuralgia" - a nerve and painful myofascial syndrome with the formation of myotonic nodes, also leads to CHPPS [4,7,13,24]. Women with CHPPS have physical and psycho-emotional problems and disorders: "insomnia, loss of appetite, family and sexual problems leading to divorce, depression, disability, psychological disorders" [11]. In addition, 60% of women with CHPPS are diagnosed with psychological disorders, which is significantly more pronounced [12].

However, the psycho-emotional disorders of CHPPS do not necessarily have a common pathogenesis and are interconnected, but even if they are parallel to each other, they increase the severity of each other's symptoms[14].

CHPPS increases anxiety and depression, increases stress levels, and enhances vegetative manifestations in the pelvis and in the body as a whole [17].

CHPPS, as a stress reaction after rape and trauma, increases anxiety and depression, increases stress levels, and enhances vegetative manifestations in the pelvis and in the body as a whole [17].

There is a proven relationship between rape and the formation of CHPPS as a post-traumatic stress reaction. The influence of sexual and physical violence on the formation of CHPPS without medical reasons has been reliably proven, as well as the formation of refusal or avoidance of sexual intercourse, vaginismus in some raped women, so that 62.5% of them avoided sexual intercourse in their lives [13].

The influence of sexual and physical violence on the formation of CHPPS without medical reasons has been reliably proven [13], as well as the formation of refusal or avoidance of sexual intercourse in some raped women, vaginismus in some raped women, so that 62.5% of them avoided sexual intercourse in their lives. increases anxiety and depression, increases stress levels, and increases vegetative manifestations in the pelvis and the body as a whole [13]. There is a proven relationship between rape and the formation of CHPPS as a post-traumatic stress reaction. The influence of sexual and physical violence on the formation of CHPPS without medical reasons has been reliably proven, as well as the refusal or avoidance of sexual intercourse in some raped women, the formation of vaginismus, so 62.5% of them avoided sexual intercourse during their marriage. Approximately 70% of patients with CHSOs report a significant decrease in the frequency of sexual intercourse, 78-84% of whom have excluded sex from their lives due to anxiety and depression related to sex, various somatic and psychosomatic pathologies [13,17,41].

In a study of patients enrolled in treatment programs in England, the frequency of sexual disorders associated with pain in women was found in 73% of cases, and in an assessment of the impact of CHSOs on quality of life, 66% of patients had moderate pain, 34% had severe pain, 46% had constant pain, and 54% had periodic pain. At the same time, 59% of patients reported suffering from pain for 2 to 15 years, pain contributed to the development of depression in 21% of them, and in 61% of cases, work efficiency decreased, as a result of which 19% of subjects were forced to lose their jobs, 13% were forced to change jobs, and due to severe and unbearable pain, skilled workers were forced to transfer to low-skilled jobs [17,41].

Based on the literature reviewed, we conclude that CHPPS is the most pressing interdisciplinary problem of the new millennium, urgently requiring new diagnostic methods and effective individual treatment, since its etiopathogenesis is multifaceted, complex and highly variable.

Diagnosing and treating long-term CHPPS in women is very difficult due to the nuances of female anatomy and the many possible pathologies of the pelvic organs, such as urological, gynecological, neurological, enterological, musculoskeletal system and psychosomatic.

This prevalence of CHPPS implies an increased interest of scientists in etiopathogenesis, issues of diagnosis and differentiation of symptoms, and highly targeted therapy.

CHPPS is a syndrome characterized by persistent or recurrent pelvic pain of varying frequency against the background of an infectious or other diagnosed pathology explaining the pain. CHPPS is often associated with negative cognitive, psychobehavioral, sexual-emotional symptoms, functional disorders of the lower urinary tract, impaired sexual and gynecological functions, and gastrointestinaldysfunction[5, 7, 17, 21 36].

Even in the new millennium, CHPPS represents a diagnostic and therapeutic puzzle for medicine and requires the search for new effective measures for its treatment, which is widely discussed in the specialized literature. Based on the analyzed literature, we conclude that CHPPS is the most urgent interdisciplinary problem of the new millennium, urgently requiring new diagnostic methods and effective individual treatment, since its etiopathogenesis is multifaceted, complex,and highly variable[7, 23,29,38].

General clinical research methods

In a comprehensive examination of patients with CHSO, attention was paid to complaints and a detailed active history of the disease was collected, laboratory, general clinical and instrumental examination methods were performed. We especially carefully and actively collected the life history and obstetric-gynecological history of women, paying special attention to the time of onset, dynamics of changes and the nature of clinical complaints and symptoms of CHSO**.** We applied neurological rating scales in the examinations and assessment of results with the **aim** of making them convenient for patients and doctors, focusing on inflammatory and non-inflammatory pathologies of the genitalia, while recording all diseases in each patient's history (during both prepubertal and pubertal periods). Patients were assigned to be examined using the NRS (numerical rating scale), the Hospital Anxiety and Depression Scale (HADS) and the Spielberger STAI test, based on international recommendations [19].

Investigations and results.

The patients subjectively determined the level of STOS using a visual analogue scale (VAS) when interpreting the clinical symptoms of pain perception (RNS) using a numerical rating scale (NRS) [138, 600-604]. Technically, a 10 cm (100 mm) long green-to-red line was used [43]. The intensity of the staining increased from 0 to 10, with the starting point of the line indicating the absolute absence of pain - 0, then mild pain - 1-5 points, moderate pain - 5-7 points, and 8-10 points correspond. Severe pain in CHPPS requires the patient to indicate the level of pain with CHPPS on this line with a score of 0-10 points [43].

The use of neurological rating scales is convenient for patients and physicians because it is simple and intuitive (no training required) and can be used as a valuable tool for documenting the severity and control of symptoms, as well as monitoring the effectiveness of treatment [43]. The results obtained using the VAS and SSO are characterized by good reproducibility, high sensitivity and are suitable for daily use, the only difference between them being the presence of 1 cm segments marked with numbers in the SSO. [43].

Self-reported subjective pain is useful for assessing quality of life and treatment efficacy, but it is important to consider the variability in subjective pain perception and the wide variability in outcomes [33,43].

We used the Hospital Anxiety and Depression Scale (HADS). The time it took for the patient to complete the HADS scale independently after instructions was approximately 5–10 minutes. The classic form of the HADS scale for patients includes questions on the “anxiety” and “depression” subscales, each of which is scored separately for each subscale. To avoid bias, the questions were mixed, which were interpreted as follows: 0–7 points as “normal”, 8–10 points as “subclinically expressed anxiety/depression”, 11 points and above as “clinically expressed anxiety/depression” [36, 43] (Appendix 2).

Our subjects also completed a mandatory online Spielberger-Hanin test (“Spielberger STAI test”), which consists of 40 questions (20 questions each) reflecting the scale of situational and personal anxiety (Appendix 3) [20]. The result is displayed on a scale of 20 to 80 points, the interpretation of which is as follows: 20-30 points - low reactive / situational anxiety, 31-44 points - moderate reactive / situational anxiety, 45-80 points - high reactive / situational anxiety [20]. The Spielberger-Hanin test is an informative

method for self-assessment of the level of anxiety (reactive anxiety, as a state) and personal anxiety (as a stable trait of a person) at a given moment [33,43].

Situational or reactive anxiety is described as a state of: "subjectively experienced feelings: tension, anxiety, worry, nervousness. This state is characterized by instability over time and a variable intensity depending on the strength of the impact of the stressful situation. Thus, the value of the final indicator for this subscale allows us not only to assess the current level of anxiety of the subject, but also to determine whether he is under the influence of a stressful situation and what is the intensity of this impact on him" [20].

Personal anxiety is a constitutional feature that determines the tendency to perceive a very wide range of situations as a threat, to respond to each of them with a certain attitude. As a tendency, personal anxiety is activated by the perception by a person of certain stimuli that are considered dangerous for his self-esteem and self-esteem. With high personal anxiety, each of these situations has a stressful effect on the subject and causes severe anxiety in him. Very high personal anxiety is directly related to neurotic conflicts, emotional and neurotic disorders, and psychosomatic diseases."[20].

However, discussing your well-being with your doctor and actively assessing your condition together with your doctor can smooth out the mutual subjectivity of the assessment, which allows you to more accurately assess the subjective feeling of pain and any other symptoms [23, 33, 43]. Using the NRS (numerical rating scale), the Hospital Anxiety and Depression Scale (HADS), and the Spielberger STAI test, patients rated the severity of pain during the SSO arousal, their general somatic condition, the strength of the STO, the level of anxiety, depression, and the state of personal and reactive anxiety were determined. Analyzing the results of the subjective assessment of the situation by our patients, we concluded that **CHSO** should be considered not only as a medical, but also as a social problem, since this pathology significantly affects the psychological state of patients and significantly increases anxiety, depression on the HADS scale to a subclinical level ($p \leq 0.05$), and personal and reactive anxiety according to the Spielberger STAI test ($p \leq 0.05$) (Table 1).

Table 1.

Subjective assessment of patients with CHSO on measurements and questionnaires (M±m).

Indicators	BG(n=54)	CG (n=52)	CG (n=30)	Average
Pelvic pain during arousal	7,32±0,45*	6,45±0,86*	2,31±1,36	5,46±1,03
Strength of CHPPS according to NRS (numerical rating scale) during arousal	3,85±0,67*	-	-	-
Severity of general condition	7,32±1,27*	6,37±1,09*	2,47±0,72	4,96±0,94
HADS anxiety score	9,32±0,78*	8,17±0,46*	4,69±1,08	7,41±0,82
HADS depression score	9,08±0,63*	7,83±0,67*	4,29±1,04	7,04±0,87
HADS personal anxiety score	35,68±3,46*	34,12±3,62	28,36±2,74	32,67±3,18
HADS reactive anxiety score	44,63±3,86*	42,61±3,79	34,32±3,43	38,15±3,58

Note: * - the difference in NG indicators is $p \leq 0.05$.

Subjective assessment of the condition of AG and SG patients during the exacerbation of CPSO and CHPPS significantly differs from the assessment of NG both outside the exacerbation of CHSO and outside the NG ($p \leq 0.05$). The same applies to the assessment of the severity of the patient's condition. The condition of AG and SG representatives is statistically significantly different from the condition of women from NG ($p \leq 0.05$).

Conclusions

1. Chronic salpingoophoritis complicated by chronic pelvic pain syndrome should be considered not only as a medical but also as a social problem.
2. Women with chronic salpingoophoritis complicated by chronic pelvic pain syndrome should be assessed using the NRS (numerical rating scale) scale, the Hospital Anxiety and Depression Scale (HADS), and the Spielberger STAI test to assess their condition and the severity of their condition.

List of used literature.

1. Abdullaev R.N., Abdullaeva M.A., Sobirova M.R. Treatment and prevention of pelvic adhesions by intraoperative method.//Moscow. Problems of Science. - 2018, - №11(35),- P.56-60
2. Abusueva B.A., Khanmurzaeva S.B., Kamchatnov P.R. Clinical features of chronic pelvic pain syndrome in women of average age group // Medicine. a lifb. 2016. Vol. 4, No. 26. P. 26-30
3. Ayorinde A.A., Bhattacharya S., Druce K.L., Jones G.T., Macfarlane G.J. Chronic pelvic pain in women of reproductive and post-reproductive age: a population-based study. // Eur. J. Pain. 2017. - Vol. 21. No. 3. - P. 445-455
4. Ashtiani EM, Shokouhi N, Mohseni M, Saedi N, Haeri-Mehrizi AA, Bakhtiyari M. A novel radiofrequency modulation therapy versus routine physiotherapy modalities in treatment of myofascial pelvic pain syndrome: a pilot randomized trial. // Obstet Gynecol Sci. 2023 - №66(3) – p.230-240.
5. Ariyants I.R., Yagubov M.I. Chronic pelvic pain syndrome in sexological practice . //Social and clinical psychiatry. - 2020,- vol. 30 № 3.- P. 93-98;
6. Alimova I.K., Khilkevich E.G., Chuprinin V.D. and others. Clinical and diagnostic features of retrocervical endometriosis // Obstetrics and gynecology. – 2018. – № 6. – P. 45–53.;
7. Breivik H., Gordh T., Kalso E., Jensen T.S., Lindal E. A networking and publishing tool for pain researchers and pain clinicians in the Nordic countries. // Scand. J. Pain. - 2010. - Vol.1. #1. - P. 1-2.;
8. Chelimsky G., Simpson P., Mc Cabe N., Zhang L., Chelimsky T. Autonomic Testing in Women with Chronic Pelvic Pain. // J. Urol. - 2016. - Vol. 196.№2. - P. 429-434
9. Chang L. Brain responses to visceral and somatic stimuli in irritable bowel syndrome: a central nervous system disorder? Gastroenterol. // Clin. North. Am. 2015. - Vol. 34.№2. - P. 271-279
10. Chiarotto A., Maxwell LJ., Ostelo R.W. et al. Measurement properties of visual analogue scale, numeric rating scale, and pain severity subscale of the brief pain inventory in pa-tients with low back pain: A systematic review // J. Pain. -2019. -Vol. 20. -№3. -P. 245-263.
11. Demirov A.V. / Medical and social foundations of maintaining organ function in the process of pelvic inflammatory diseases in women. // "Voronezh GMA im. H.H. Burdenko" MZ RF, Voronezh, 2014. – P. 50–55.
12. de Souza RJ, Villela NR, Brollo LCS, Oliveira MAP. Impact of chronic pelvic pain and painful bladder syndrome on the Pittsburgh Sleep Quality Index on women with deep endometriosis: a cross-sectional study. // Int Urogynecol J. 2023 - №20. – p. 78-83.
13. Dunphy L, Wood F, Mubarak ES, Coughlin L. Levator Ani Syndrome Presenting with Vaginal Pain. // BMJ Case Rep. 2023 - №16(5) – p.255-270
14. Elgendi M., Allaire C., Williams C. et al. Machine learning revealed new correlates of chronic pelvic pain in

women // Front. Digit. Health. - 2020. - Vol. 2. -P. 600-604
15. Galea M, Brincat MR, Calleja-Agius J. A review of the pathophysiology and evidence-based management of varicoceles and pelvic congestion syndrome. // Hum Fertil (Camb). 2023 - №16. – p.1-12
16. Giannantoni A., Gubiotti M., Balzarro M., Rubilotta E. Resilience in the face of pelvic pain: A pilot study in males and females affected by urologic chronic pelvic pain // Neurourol. Urodyn. -2021. -Vol. 40. - №4. - P. 1011-1020.;
17. Gusev E.I. Neurology: national instruction / E.I. Gusev, A.N. Konovalov, V.I. Skvortsova. 2nd edition. T. 1. Moscow: GEOTAR-Media; 2018. 880s.
18. Guan Q, Velho RV, Jordan A, Pommer S. Nociceptin/Orphanin FQ Opioid Peptide-Receptor Expression in the Endometriosis-Associated Nerve Fibers-Possible Treatment Option? // Cells. 2023 May №12(10) – p.1395-1402
19. Jarrell J.F., Vilos G.A., Allaire C. et al. №164 consensus guidelines for the management of chronic pelvic pain // J. Obstet. Gynaecol. Can. -2018. -Vol. 40. - №11. -P. e747-e787
20. Huntzinger J, Selassie M. Interventional Pain Management in the Treatment of Chronic Pelvic Pain. // Curr Urol Rep. 2023 - №24(4) – p.165-171.
21. Kryuchkova M.N., Soldatkin V.A. Surunkali tos og`rig`i sindromi: psixopatologik aspekrlar // Urologiya vestnik. – 2017 - №5(1). – s.52-63.
22. Konoplya A.A. Correction of the restoration of immune, cytokine and antioxidant status in patients with chronic salpingo-oophoritis // Medical immunology. - 2006. - T. 8, No. 1. - P. 97-100
23. Kuznetsova, I.V. The role of oxidative stress and antioxidant protection in human reproduction // Obstetrics and gynecology. - 2016. - No. 3. - P. 116–121
24. Larsen ML, Hilden M. Male victims of sexual assault; 10 years' experience from a Danish Assault Center. // J. Forensic Leg. Med. - 2016. - Vol. 43. - P. 8-11
25. Lee HJ., Cho Y.,Joo H. et al. Comparative study of verbal rating scale and numerical rating scale to assess postoperative pain intensity in the post anesthesia care unit: A pro-spective observational cohort study // Medicine (Baltimore). -2021. - Vol. 100. -№6. - P. e243-254.;
26. Lang T.A., Sesik M. How to present statistics in medicine. A guide for authors, editors and reviewers / Translated from English by V.P. Leonov. - M.: Amaliy Tibbiyot, 2011. - 480 p.
27. Lam CM, Keim SA, Latif U. Novel implantation technique for pudendal nerve peripheral nerve stimulation for treatment of chronic pelvic pain. // Reg Anesth Pain Med. 2023 - №10 – p. 45-51.
28. Moskvenko N.V., Beznoshchenko G.B., Moskovenko A.V. Prevention of pelvic pain syndrome in women of childbearing age in medical units during psychophysical recovery // Ural Medical Journal. – 2012. – No. 9 (101). – P. 78–83.
29. Piontek K., Ketels G., Klotz S.G.R. et al. The longitudinal association of symptom-related and psychological factors with healthrelated quality of life in patients with chronic pelvic pain syndrome // J. Psychosom. Res. -2022. - Vol.153. -P.110-117.
30. Pitts M.K., Ferris J.A., Smith A.M., Shelley J.M., Richters J. Prevalence and correlates of three types of pelvic pain in a nationally representative sample of Australian women. // Med. J. Aust. - 2018. - Vol.189.№3. - P. 138-143
31. Riegel B., Bruenahl C.A., Ahyai S., Bingel U., Fisch M., Löwe B. Assessing psychological factors, social aspects and psychiatric comorbidity associated with Chronic Prostatitis/Chronic Pelvic Pain Syndrome (CP/STOS) in men - a systematic review. // J. Psychosom. Res. 2014. - Vol. 77.№5. - P. 333-350
32. ROAG klinik tavsiyaları. Akusherlik va ginekologiya / Muharriri V.N. Serova, G.T. Sukhix. – 4- nashr. – M.: GEOTAR-Media, 2014. – 1024 s.
33. Rush G., Misajon R., Hunter J.A. et al. The relationship between endometriosis-

related pelvic pain and symptom frequency, and subjective wellbeing // Health Qual Life Out-comes. -2019. -Vol. 17. - №1. - P. 123-128
34. Shahat M, Hussein RS, Ahmed AKS. Foam Sclerotherapy in Pelvic Congestion Syndrome. // Vasc Endovascular Surg. 2023 - №57(5) – p. 456-462.
35. Schrepf AD, Mawla I, Naliboff BD, Gallop B. Neurobiology and longterm impact of bladderfilling pain in humans: a Multidisciplinary Approach to the Study of Chronic Pelvic Pain (MAPP) research network study. // Pain. 2023 - №6 – p. 29-44
36. Shurpyak S. A. Tos og'rig`i sindromi ginekologik amaliyotda (ko'rib chiqish maqolasi) // Ayolning sog'lig'i. 2016. - № 6. - S. 12-18
37. Tempest N., Efstathiou E., Petros Z., Hapangama O.K. Laparoscopic outcomes after normal clinical and ultrasound findings in young women with chronic pelvic pain: A cross-sec-tional study // J. Clin. Med. -2020. -Vol. 9. - №8. - P. 2593-2601
38. Thong I.S.K., Jensen M.P., Mira J., Tan G. The validity of pain intensity measures: what do the NRS, VAS, VRS, and FPS-R measure? // Scand. J. Pain. - 2018. -Vol. 18. -№1. - P. 99-107
39. Vinogradova O.P. Salpingoophoritis from the index of the systemic pain response of salpingoophoritis. Author's abstract for the degree of Doctor of Science. - Volgograd, 2014. - 45b
40. Vinogradova O.P. Biryuchkova O.A., Korshunov G.V., Podimkina A.V. On how to determine the severity of the liver system and the pain system // Dictionaries of modern social problems. - 2014. - No. 9 (41). p. 54-62
41. Zaks N, Batuure A, Lin E, Rommel AS. Association Between Mental Health and Reproductive System Disorders in Women: A Systematic Review and Meta-analysis. // JAMA Netw Open. 2023 - №6(4) – p. e238-245
42. Zaytsev A.V., Sharov M.N., Kan Ya.D. Chronic pelvic pain. Modern view of institutionalization. Characteristics of diagnostics and treatment // Russian Journal of Pain. 2015. No. 2. P. 3–8.
43. Ziyayeva E.R. / Optimization of therapeutic measures in women with chronic salpingoophoritis complicated by pain syndrome.// Dissertation PhD. 2025y. 146b.