RESEARCH ARTICLE

A comparison of the efficacy of pharmacotherapy and hypnotherapy in patients with primary dysmenorrhoea

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Abstract

Objective: To compare the efficacy of a single-dose 75mg diclofenac sodium tablet and single-session hypnosis for the treatment of primary dysmenorrhoea.

Method: The interventional, prospective, controlled study was conducted from May 23, 2022, to June 1, 2023, after approval from the ethics committee of Atatürk University Medical Faculty, Türkiye, and comprised primary dysmenorrhea female patients having visual analogue scale score >4. On the basis of Taştan Suggestibility Scale score <3 were placed in group A and were given 75mg diclofenac sodium tablets. Those with Taştan Suggestibility Scale score 3 or more were placed in group B and received hypnotherapy. Visual analogue scale was applied to both the groups again at 30 and 60 minutes post-intervention. Data was analysed using SPSS 22.

Results: Of the 60 female patients, 30(50%) were in group A with mean age 27.3±6.7 years, and 30(50%) were in group B with mean age 27.3±6.6 years. The two groups were not significantly different in terms of age, education, marital status, working status, and previous treatment ($p>0.05$). VAS scores at baseline and 30 minutes post-intervention were not significantly different between the groups ($p>0.05$), but the decrease at 60 minutes post-intervention in group A was significantly greater than in group B ($p<0.05$).

Conclusion: Pharmacotherapy and hypnotherapy were both effective in reducing pain in primary dysmenorrhoea patients, but the effect of pharmacotherapy lasted longer than that of hypnotherapy.

Keywords: Diclofenac sodium, Hypnotherapy, Primary dysmenorrhea. (JPMA 75: 1367; 2025)

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Introduction

Primary dysmenorrhoea (PD) is a frequently observed gynaecological disease, and is one of the most common causes of pelvic pain in women of reproductive age. The definition of "pain" was recently revised by a committee of international pain specialists as an uncomfortable sensory and emotional perception linked to either real or potential tissue damage.[1] Pain in PD patients emerges in a cramp-like form during menstruation, and is mainly located in the lower quadrant.[2,3] It adversely affects the quality of life (QOL) of young women in particular, and is the main cause of irregular attendance at school or work. Both physical and psychological symptoms can be observed. Physical symptoms include headache, numbness, sleep disorders, tender breasts, various body pains, appetite loss, nausea, vomiting, constipation and increased urination. Psychological symptoms include mood disorders, such as anxiety, depression and irritability. Diagnosis relies on the patient's history, symptoms and physical examination.[4] The aetiology of PD remains highly controversial. Wang et al.'s prospective study implicated stress in the aetiology, with decreased pain thresholds being observed in these patients.[5]

Various methods (pharmacological, non-pharmacological, or surgical) can be used in treatment, although the first stage of treatment consists of non-steroidal anti-inflammatory drugs (NSAIDs) and hormonal contraceptives for women targeting birth control.[6,7]

The pharmacodynamic action of any pharmacological molecule is limited to the length of time it remains in the body. The duration of action of NSAIDs is very short, and they, therefore, have to be administered two to three times a day. Despite the high efficacy of these conventional treatments, their failure to adequately address symptoms is still approximately 20-25%.[8]

Long-term medications are also erroneously believed to adversely affect future fertility. Patients, therefore, frequently resort to complementary and alternative therapies in addition to conventional treatment.

The current study was planned to compare the efficacy of a single-dose 75mg diclofenac sodium tablet and single-session hypnosis for the treatment of PD.

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Patients and Methods

The interventional, prospective, controlled study was conducted from May 23, 2022, to June 1, 2023, after approval from the ethics committee of Atatürk University Medical Faculty, Türkiye.

The research population consisted of patients who presented to the Erzurum City Hospital's gynaecology and obstetrics emergency clinic between at 8am and 4pm, and were diagnosed with PD. The sample was raised using convenience/purposive sampling technique. Individuals consenting to participate were given verbal information about the research and were evaluated using the Visual Analogue Scale (VAS), which is a reliable and valid pain measurement tool.[9] Severity was rated from 0=no pain to 10=the worst imaginable pain. VAS value 1-4 indicated mild pain, 5-6 indicated moderate pain, and 7-10 indicated severe pain.

Susceptibility to hypnosis is measurable,[10] and the current study used the Taştan Suggestibility Scale (TSS), which is of proven reliability and validity. The scale consisted of four applications, each of which was scored 0-2. The maximum possible total score was 8. Individuals scoring <3 points were classified as having low susceptibility to hypnosis, those scoring 3-5 points were classified as moderately susceptible, and those scoring 6-8 points were classified as highly susceptible.[11]

Individuals scoring <3 on the TSS were placed in group A. A single dose of diclofenac sodium 75mg tablet was given to these patients by a specialist. Individuals scoring 3 or more on the TSS were placed in group B, and they received one session of hypnotherapy from a specialist physician who had undergone the Ministry of Health-approved hypnosis training. Since the duty hours of the hypnotherapy specialist are limited to daytime, the sample comprised patients who presented during the daytime.

Power analysis with Russ Lenth's Power[12] was used for sample size calculation with alpha (α) error 0.05, beta (β) error 0.04, and test power 0.96. The sample was inflated by 20% to cover for dropouts. Those included were patients with painful and regular menstruation in the preceding six cycles, with the duration of menstrual cycle ranging 21-35 days, and maximum pain intensity ranging from 5.0 to 9.1 on VAS, and having PD pain characteristics, like pain radiating to the back and thighs, crampy and spasmodic pain in the lower abdomen that began just before or when menstrual bleeding began and gradually decreased over 1-3 days.

Those who were married, had irregular menstrual cycle, those with cardiovascular or pulmonary diseases, or disorders of the central nervous system were excluded, and so were those with hepatic or gastrointestinal disease, and/or history of urticarial, or allergy to NSAIDs.

In order to exclude secondary dysmenorrhoea, all the participants underwent abdominal examinations involving palpation and ultrasonography by a qualified and registered gynaecologist. This was done in order to confirm the presence of any abdominal pathology. The presence of PD was confirmed in all the participants.

The patients scheduled for hypnosis were first given information about the procedure. This was performed using the visual fixation and verbal suggestion method.[13] Relaxation suggestions were applied in the first stage, allowing the patients to relax and feel at ease. The patients were then allowed to enter deep hypnosis using the Dave-Elman induction method.[14] Each participant received the following suggestions during hypnosis: "From now on you will continue to relax and drift deeper for so long as you hear my voice. So long as you hear my voice, you will be aware that everything is all right and you will comply comfortably with the commands given. Now take a deep breath and drift deeply.

"I now want you to imagine yourself entering a room. This is a room that controls your body and mind. There is a place in the room that controls all your bodily sensations. You are now responsible for this room. You will control all the feelings and sensations in your body.

"There is a large screen directly opposite you in the control room. I want you to look at it. You also control the images on that screen. I now want you to visualise your reproductive organs and detect the pain in that region. After detecting this pain, you can reduce it by turning the button on the control panel in front of you to the left. This is entirely under your control … As you turn this button to the left, you will see on the screen that the contraction in your organs diminishes and will feel relief … I want you to continue doing this until you feel complete relief …

"You can terminate the procedure once you feel complete relief … Once you feel complete relief, I want you to take a deep breath and release it slowly from your mouth. When you do this, you can open your eyes and will feel relieved from all your pain."

Each session lasted approximately 30 minutes. Following both treatment methods, the participants' pain levels were again measured using VAS at 30 and 60 minutes.

Data was analysed using SPSS 22. General and demographic characteristics of the groups were expressed as frequencies and percentages. Since the findings in the

data did not show a normal distribution, as assessed using the Kolmogorov-Smirnov test, nonparametric tests were applied. In bilateral comparisons, Mann-Whitney U test was used to compare the mean of two independent groups. Kruskal-Wallis test was used for mean comparisons of multiple independent groups. Post-Hoc Tamhane's T2 analysis was used for multiple comparisons. Chi-square test was used to determine the relationship involving categorical variables. P<0.05 was regarded as statistically significant.

Results

Of the 60 female patients, 30(50%) were in group A with mean age 27.3±6.7 years, and 30(50%) were in group B with mean age 27.3±6.6 years. The two groups were not significantly different in terms of age, education, marital status, working status, and previous treatment (p>0.05) (Table 1). Within the groups VAS scores at 0, 30 and 60 minutes differed significantly in both the groups (p<0.001) (Table 2).

VAS scores at baseline and 30 minutes post-intervention were not significantly different between the groups (p>0.05), but the decrease at 60 minutes post-intervention in group A was significantly greater than in group B (p<0.05) (Table 3).

Table-1: Demographic characteristics.

Group	n (%)
Group A	
Education	
High school	18 (60.0)
University	12 (40.0
Marital status	
Married	13 (43.3)
Single	17 (56.7)
Employment	
Yes	15 (50.0)
No	15 (50.0)
Previous receipt of treatment	
Yes	19 (63.3)
No	11 (36.7)
Group B	
Education	
High school	16 (53.3)
University	14 (46.7)
Marital status	
Married	12 (40.0)
Single	18 (60.0)
Employment	
Yes	15 (50.0)
No	15 (50.0)
Previous receipt of treatment	
Yes	18 (60.0)
No	12 (40.0)

Table-2: Intragroup comparison of Visual Analogue Scale (VAS) values.

Group	VAS						Statistics
	VAS (0)		VAS (30)		VAS (60)		
	Mean±SD	Median (Q1-Q3)	Mean±SD	Median (Q1-Q3)	Mean±SD	Median (Q1-Q3)	
Group A	6.8±1.3	6.5(5.75-8)[a]	4.2±1.2	4(3-5)[b]	2.9±1.3	3(2-4)[c]	*χ^2=56.513 p<0.00
Group B	6.8±1.2	7(6-8)[a]	4.4±0.9	4(4-5)[b]	3.4±0.7	3(3-4)[c]	*χ^2=56.857 p<0.00

*Friedman test; * a, b, c: The values in the same column are different from each other (p<0.05). Groups that do not have common letters are different from each other.

Table-3: Distribution of visual analogue scale (VAS) scores between the groups.

Group	VAS					
	VAS (0)		VAS (30)		VAS (60)	
	Mean±SD	Median (Q1-Q3)	Mean±SD	Median (Q1-Q3)	Mean±SD	Median (Q1-Q3)
Group A	6.8±1.3	6.5(5.75-8)	4.2±1.2	4(3-5)	2.9±1.3	3(2-4)
Group B	6.8±1.2	7(6-8)	4.4±0.9	4(4-5)	3.4±0.7	3(3-4)
Statistics	U=425.5	p>0.05	U=404.0	p>0.05	U=288.5	p=0.013

Discussion

The current study found that both NSAIDs and hypnotherapy exhibited a similar effect at 30 minutes, but NSAIDS were more effective than hypnotherapy at reducing pain at 60 minutes.

Despite the high efficacy of pharmacological agents used to treat dysmenorrhoea, their failure rate is approximately 20-25%.[15] A previous study reported that the response to NSAIDs generally occurs within 30-60 minutes.[16]

The psychosomatic nature of dysmenorrhoea accounts for the use of therapeutic modalities that involve the mind-body relationship. Hypnosis, one example of such modalities, has been described as effective in treating a range of medical conditions. Hypnosis can be described as an altered state of consciousness entailing highly focussed attention and increased compliance with suggestions.[17]

Hypnotic and posthypnotic suggestions can be applied for the purpose of facilitating emotional, behavioural and physiological changes for therapeutic purposes, and can be beneficial not only for mental health, but also in medical treatment.[15]

The number of studies reporting the efficacy of hypnosis in reducing pain has increased significantly in recent years.[15-20]

The role of the anterior cingulate cortex, cerebellum and prefrontal cortex has been demonstrated in the neurophysiological basis of hypnotic responses in a range of treatments, including pain relief.[18,21,22]

Increased activation of the cerebellum, anterior middle cingulate cortex, anterior and posterior insula, and inferior parietal cortex is known to occur following hypnotic induction.[21,23,24]

A number of researchers have investigated the application of hypnosis in obstetrics and gynaecology.[25-27]

A study proposed dysmenorrhoea and oligomenorrhoea, dyspareunia and vaginismus, psychogenetic amenorrhoea, and gynaecological somatisations of psychotic states as indications for hypnosis.[28]

The use of hypnosis in the treatment of complex psychological and somatic conditions usually necessitates a structured mode of therapeutic intervention. However, the use of a series of therapy sessions, or even a single hypnosis session directed towards a simple symptom or bodily function, can sometimes be beneficial.[17] Literature review failed to find any study describing the use of single-session hypnosis specifically in cases of dysmenorrhea in gynaecology emergency clinics.

Interventions used in pain management do not routinely employ clinical hypnosis, despite evidence to suggest its effectiveness in improving pain outcomes. In a study, one group received hypnosis, while the other was given medications for pain relief over three menstrual cycles, followed by three cycles with no treatment. The hypnotherapy consisted of 14 sessions over seven hours. The reported effect of hypnosis and medications on QOL was similar in both the groups at the third and sixth cycles. Median pain scores in hypnosis group, in all subsequent cycles, were significantly lesser than the baseline. In the NSAID group, significant difference in median pain scores was found only up to the first three cycles. Pain score was significantly lesser in the NSAID group in the first cycle. After stopping the treatment, i.e., from the fourth cycle onward, the pain score decreased in the hypnosis group compared to the NSAID group. The study suggested that hypnosis had long-lasting effects even after cessation of the sessions. Additionally, the study found that hypnosis had a rapid pain relief effect.[29]

Another study noted that hypnosis had a long tradition of effectiveness in controlling somatic symptoms, such as pain.[30] The present study compared the efficacy of a single session of hypnosis for dysmenorrhoea.

The patients included in the present study were evaluated using the TSS, and those exhibiting medium and high suggestibility levels were included. Correlation between the TSS and the Stanford Hypnotic Clinic Scale total scores[31] has been reported to be high ($p<0.001$). The mean duration of the application of the scale was 5.0±1.2 minutes.

The pain levels of the patients in the current study decreased significantly at 30 and 60 minutes compared to the baseline. This finding was consistent with literature.[29,30] However, since patients with low suggestibility levels were not included, the relationship between hypnosis and pain could not be assessed in such individuals. A study reported optimal pain relief in individuals with medium and high suggestibility, while minimal pain relief was observed in those with low suggestibility.[32]

The selection of patients with high and moderate susceptibility to TSS and applying a treatment lasting 30 minutes to those selected patients are naturally matters open to criticism. However, it should be remembered that NSAIDs cannot be used by patients with gastrointestinal problems, bleeding diathesis problems, or allergies to NSAIDs, as they have numerous side-effects. On the other hand, hypnotherapy can be safely employed in obstetric emergency clinics.

The current study has limitations owing to a small sample size which affected the generalisability of the findings. Further studies with larger sample sizes are needed to validate the current results about the use of hypnosis in the treatment of dysmenorrhea. Besides, the patients were not randomised to receive one of the two intervention approaches. Patients more susceptible to hypnotherapy may not be representative of the general population. Finally, the participants were only monitored during one menstrual cycle and immediately afterwards, making it impossible to measure the effectiveness of hypnosis in subsequent phases.

Conclusion

Both NSAIDs and hypnosis significantly reduced pain during the treatment of dysmenorrhoea. However, NSAIDS were more effective than hypnotherapy at reducing pain at 60 minutes post-intervention. In the light of the side-effects of NSAIDs and the conditions under which they are contraindicated, more widespread use of hypnosis may be recommended for the treatment of dysmenorrhoea., especially in the emergency department.

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KT: Concept, analysis investigation, validation, writing and supervision.
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IBYK: Concept, investigation, methodology and writing.
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