

Plastrowanie dynamiczne jako alternatywa dla środków przeciwbólowych w redukcji bólu menstruacyjnego

Kinesiology taping as an alternative to painkillers used for the reduction of menstrual pains

Tomasz Wilk^{1(A,B,D,E,F)}, Magdalena Niewęłowska-Wilk^{2(B,C,D)}, Izabela Załęska^{3(E,F)}

¹Szpital Uniwersytecki w Krakowie, Oddział Kliniczny Chirurgii Ogólnej i Obrażeń Wielonarządowych, Kraków, Polska/University Hospital, Department of General Surgery and Trauma Multi-organ, Krakow, Poland

²Uniwersytet Jagielloński Collegium Medicum, Zakład Dermatologii Doświadczalnej i Kosmetologii, Kraków, Polska/Department of Experimental Dermatology and Cosmetology Jagiellonian University Collegium Medicum, Krakow, Poland

³Akademia Wychowanie Fizyczne w Krakowie, Zakład Kosmetologii, Kraków, Polska/Academy of Physical Education in Krakow, Department of Cosmetology, Krakow, Poland

Streszczenie:

Cel. Ocena skuteczności zastosowania plastrowania dynamicznego jako alternatywy dla środków przeciwbólowych w bólach menstruacyjnych u kobiet

Materiały i metody. W badaniu uczestniczyło 40 kobiet (od 20-35 roku życia) z regularnym cyklem miesięczkowym. Przed rozpoczęciem pierwszego oklejania każda z badanych oceniała nasilenie bólu menstruacyjnego w skali wizualno-analogowej (VAS). 20 kobietom naklejano na skórze brzucha poniżej pępka i podbrzuszu po dwie taśmy na 2 dni przed wystąpieniem miesiączki. Taśmy utrzymywane były przez 7 dni. Pozostałe 20 kobiet stanowiło grupę kontrolną, która nie została oklejona. Wszystkie 40 kobiet zostały poproszone o ocenę nasilenia bólu w 5 dniu miesiączki. Badanie przeprowadzano przez kolejne trzy miesiące.

Wyniki. U wszystkich 20 kobiet ból menstruacyjny oceniany w skali wizualno-analogowej (VAS) wynosił od 5 do 7 i wyniku zastosowanego postępowania zmniejszył się do poziomu 1 lub 0. Badane kobiety po zastosowaniu plastrowania dynamicznego nie odczuwały bólu jaki towarzyszył im podczas menstruacji lub był on minimalny. W grupie kontrolnej nie zauważono żadnych zmian związanych ze zmniejszeniem bólu.

Wnioski. Plastrowanie dynamiczne jest skuteczną alternatywą dla środków przeciwbólowych w bólach menstruacyjnych u kobiet.

Słowa kluczowe:

fizjoterapia, elastyczne taśmy terapeutyczne, ból menstruacyjny

Abstract

Aim. The evaluation of the efficiency of kinesiotaping application as an alternative to analgesics in the treatment of menstrual pain in women.

Materials and Methods. 40 subjects (women aged 20-35 years) with regular menstrual cycles took part in the study. Prior to the first taping treatment or the first observation (in the study and control group, respectively) each woman assessed the severity of her menstrual pain using the visual analogue scale (VAS). Two days before the expected menstruation 20 subjects were treated with two tapes fixed laterally in the lower abdominal area. Tapes were kept on the skin for 7 days. The procedure was repeated each month for three consecutive months. The other 20 subjects were the control group in which the treatment was not introduced. All 40 women were asked to evaluate the severity of the pain on the fifth day of their menstruation. The assessment was performed each month for three consecutive months.

Results. Menstrual pain was assessed as 5 to 7 in the visual analogue scale (VAS). The pain decreased to 1 or 0 as a result of the implemented treatment. The application of kinesiology taping resulted in the absence of menstruation pain or the occurrence of mild pain. No changes related to pain reduction were noted in the control group.

Conclusions. Kinesiology taping is an efficient alternative to the application of analgesics in reducing menstrual pain in women.

Key words:

physiotherapy, elastic therapeutic tape, menstrual pain

Introduction

Menstrual pain affects approximately 40% of the female population. The pain is triggered by the contraction of the muscles located in the lower part of the abdomen and is associated with the regeneration of endometrium [1]. Women are trying to cope with the ailments caused by this process for years. It is not surprising that there are many unconventional ways of dealing with persistent menstrual pain. Natural methods include the use of essential oils or herbs known to possess calming properties (e.g. chamomile), taking hot baths, or applying hot water bottles in the abdominal area [1]. Eating certain foods and drinking certain liquids are also supposed to bring relief in painful periods. These methods were used to alleviate menstrual pain in previous decades. However, the question is whether they are suitable for modern women. Nowadays prescribing analgesics is the simplest and easiest solution of the problem. The medications offer immediate relief but applying the so called miracle tablets does not seem to be such a great option. Medicines work quickly but may cause numerous side effects and immediate positive result is frequently temporary. The study presents kinesiology taping as an alternative to the application of analgesics. Kinesiotaping is a fast-developing method of treatment in which elastic tapes are used in order to achieve a therapeutic effect.

In the 70s Dr. Kenzo Kase created and developed a method of treatment based on the application of a flexible tape. Initially, the tapes were used by orthopedic surgeons [2]. Today therapeutic taping is used not only in orthopedics but also in physiotherapy, neurology, pediatrics, in postoperative treatment and especially in the treatment of pain. The tapes are manufactured from high quality cotton. This method of treatment is becoming increasingly popular among the specialists on account of the therapeutic continuity (24/7), lack of negative patient feedback and a long period of maintaining one skin application (3-7 days) [3].

Materials and Methods

The study involved 40 women aged 20-35 years (median 26.4) with a regular menstrual cycle. None of the subjects used contraceptives and all of them complained of dysmenorrhoea. During the study the women were not taking any analgesic, anti-inflammatory or diastolic drugs. Prior to the first treatment (the study group) or the first observation (the control group) each woman was asked to assess the severity of her menstrual pain in the visual analogue scale (VAS).

20 women constituted the study group and 20 comprised the control group. 2 days prior to menstruation 20 women were treated with 2 tapes of the "fan" type with a length of 30 cm which were cut into five equal 5cm pieces. This type of taping was selected because it is most frequently applied on large areas of the skin. It effectively raises the surface temperature at the taping site which results in the relaxation of tense muscles and reduction of pain.

The base of each tape was attached laterally above the iliac ala. The remaining parts of the tapes were fixed diagonally towards the hip joint and the lower abdomen on the opposite side (Fig.1, 2). The tapes were removed from the skin after 7 days. The procedure was repeated before each menstruation for three consecutive months. After each taping on the fifth day of menstruation the women were asked to assess the severity of menstrual pain in the visual analogue scale.



Fig.1. Taping the area of the abdomen and below: stage I



Fig.2. Taping the area of the abdomen and below: stage II

Results

Table 1. The assessment of menstrual pain before the first treatment and 7 days after each treatment (the study group)

| Patient | Age | Initial VAS pain score | VAS pain score at 1 month | VAS pain score at 2 months | VAS pain score at 3 months |
|--------------|-----|------------------------|---------------------------|----------------------------|----------------------------|
| Pacjentka 1 | 35 | 6 | 5 | 2 | 1 |
| Pacjentka 2 | 22 | 5 | 2 | 0 | 0 |
| Pacjentka 3 | 27 | 6 | 3 | 1 | 1 |
| Pacjentka 4 | 23 | 6 | 5 | 3 | 1 |
| Pacjentka 5 | 22 | 6 | 2 | 1 | 1 |
| Pacjentka 6 | 32 | 7 | 4 | 3 | 1 |
| Pacjentka 7 | 25 | 5 | 1 | 0 | 0 |
| Pacjentka 8 | 25 | 5 | 2 | 1 | 0 |
| Pacjentka 9 | 33 | 7 | 3 | 2 | 1 |
| Pacjentka 10 | 20 | 6 | 1 | 0 | 0 |
| Pacjentka 11 | 22 | 8 | 5 | 4 | 2 |
| Pacjentka 12 | 27 | 6 | 2 | 2 | 2 |
| Pacjentka 13 | 24 | 6 | 5 | 4 | 1 |
| Pacjentka 14 | 24 | 6 | 3 | 3 | 2 |
| Pacjentka 15 | 31 | 5 | 3 | 2 | 1 |
| Pacjentka 16 | 29 | 7 | 5 | 4 | 2 |
| Pacjentka 17 | 23 | 7 | 4 | 4 | 2 |
| Pacjentka 18 | 28 | 8 | 5 | 5 | 3 |
| Pacjentka 19 | 32 | 6 | 2 | 2 | 2 |
| Pacjentka 20 | 25 | 6 | 4 | 3 | 3 |

Table 2. The assessment of menstrual pain before the first observation and 7 days after each observation (the control group).

| Patient | Age | Initial VAS pain score | VAS pain score after 1 month | VAS pain score after 2 months | VAS pain score after 3 months |
|--------------|-----|------------------------|------------------------------|-------------------------------|-------------------------------|
| Pacjentka 1 | 32 | 7 | 7 | 7 | 7 |
| Pacjentka 2 | 27 | 6 | 6 | 6 | 7 |
| Pacjentka 3 | 26 | 6 | 7 | 7 | 6 |
| Pacjentka 4 | 22 | 7 | 6 | 6 | 6 |
| Pacjentka 5 | 29 | 6 | 6 | 6 | 7 |
| Pacjentka 6 | 29 | 6 | 6 | 6 | 6 |
| Pacjentka 7 | 23 | 8 | 7 | 8 | 8 |
| Pacjentka 8 | 21 | 5 | 5 | 6 | 5 |
| Pacjentka 9 | 27 | 6 | 6 | 6 | 6 |
| Pacjentka 10 | 26 | 8 | 8 | 7 | 8 |
| Pacjentka 11 | 31 | 8 | 7 | 7 | 7 |
| Pacjentka 12 | 32 | 5 | 6 | 6 | 5 |
| Pacjentka 13 | 25 | 6 | 6 | 6 | 6 |
| Pacjentka 14 | 34 | 7 | 6 | 7 | 7 |
| Pacjentka 15 | 31 | 7 | 7 | 6 | 7 |
| Pacjentka 16 | 23 | 6 | 6 | 7 | 6 |
| Pacjentka 17 | 27 | 6 | 6 | 6 | 6 |
| Pacjentka 18 | 24 | 7 | 7 | 7 | 7 |
| Pacjentka 19 | 23 | 7 | 7 | 7 | 7 |
| Pacjentka 20 | 28 | 8 | 7 | 7 | 7 |

Table 3. Patient age in the study and control group

| Group | n | wiek (lata)/age (years) | | | | | Statistical significance of differences |
|---------|----|-------------------------|-----|------|--------|------|---|
| | | mean | SD | min | median | max | |
| study | 20 | 26.5 | 4.3 | 20.0 | 25.0 | 35.0 | p=0,6679 (NS) |
| control | 20 | 27.0 | 3.7 | 21.0 | 27.0 | 34.0 | |

Two examined groups of patients did not differ in terms of patients' age.

Table 4. The assessment of pain severity in the study and control group

| Pain assessment | Group | n | Pain severity VAS score | | | | | Statistical significance of differences |
|------------------------------|---------|----|-------------------------|-----|-----|--------|-----|---|
| | | | mean | SD | min | median | max | |
| prior to the first treatment | study | 20 | 6,2 | 0,9 | 5,0 | 6,0 | 6,0 | p=0,1761 (NS) |
| | control | 20 | 6,6 | 0,9 | 5,0 | 6,5 | 6,5 | |
| after 1 month | study | 20 | 3,3 | 1,4 | 1,0 | 3,0 | 3,0 | p<0,0001 |
| | control | 20 | 6,5 | 0,7 | 5,0 | 6,0 | 6,0 | |
| after 2 month | study | 20 | 2,3 | 1,5 | 0,0 | 2,0 | 2,0 | p<0,0001 |
| | control | 20 | 6,6 | 0,6 | 6,0 | 6,5 | 6,5 | |
| after 3 month | study | 20 | 1,3 | 0,9 | 0,0 | 1,0 | 1,0 | p<0,0001 |
| | control | 20 | 6,6 | 0,8 | 5,0 | 7,0 | 7,0 | |

The severity of menstrual pain assessed in the visual analogue scale (VAS) before the first treatment/observation did not diversify the examined groups. The severity of pain in the study group was significantly lower ($p<0.0001$) than pain severity in the control group in consecutive assessments performed after the first, the second and the third month of the study.

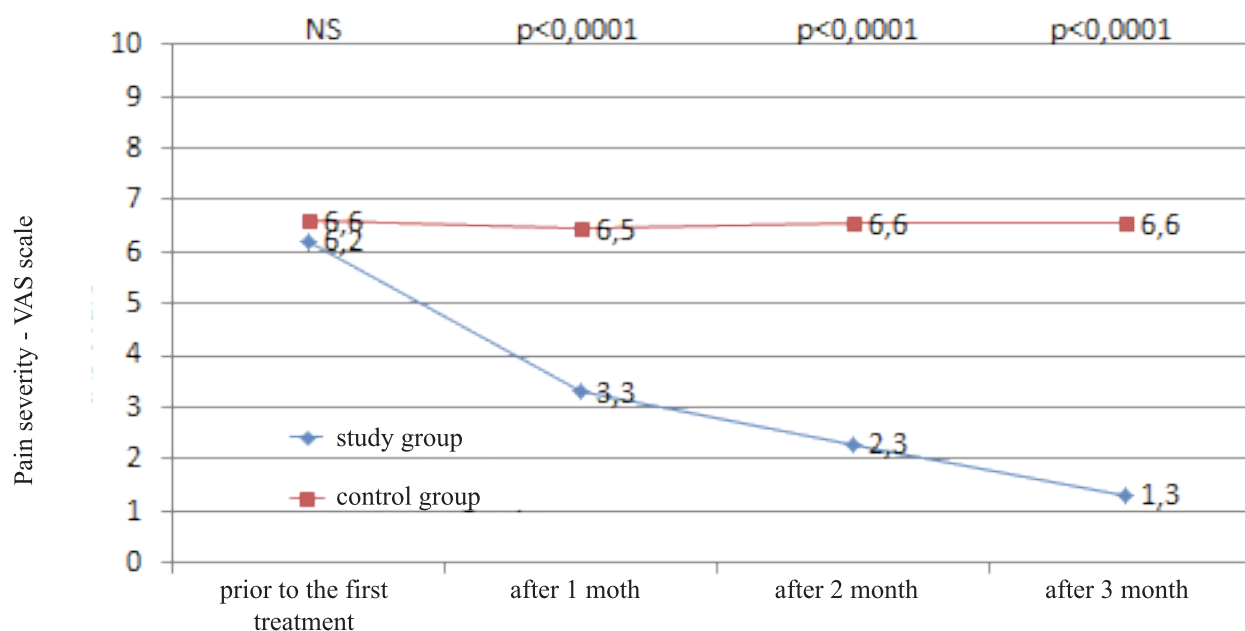


Fig. 3. The comparison of pain severity assessment in the study group and the control group

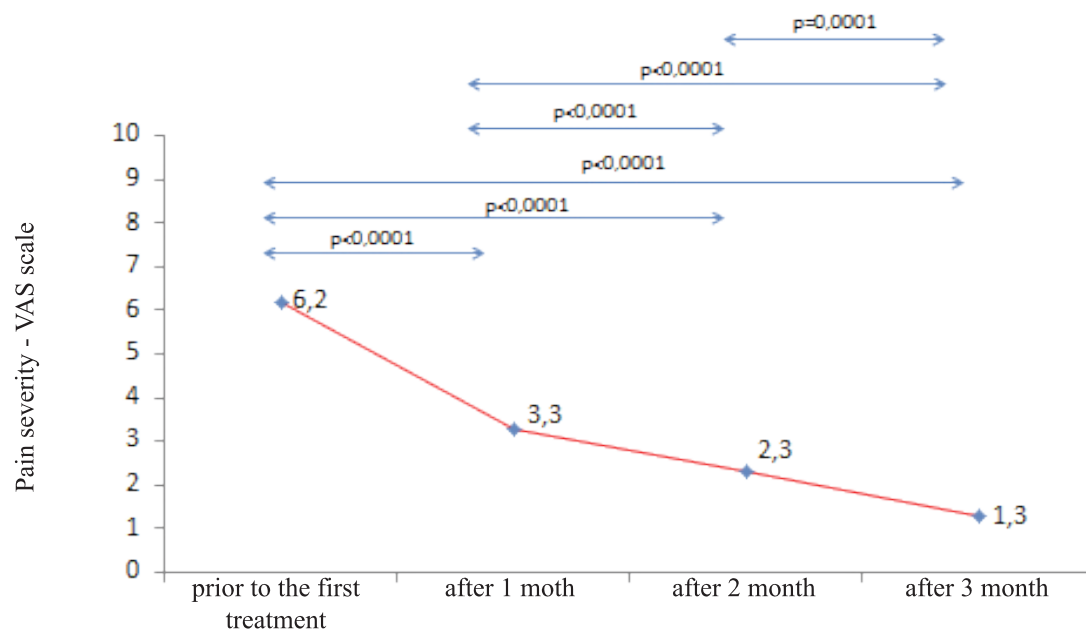


Fig.4. Pain severity in the study group

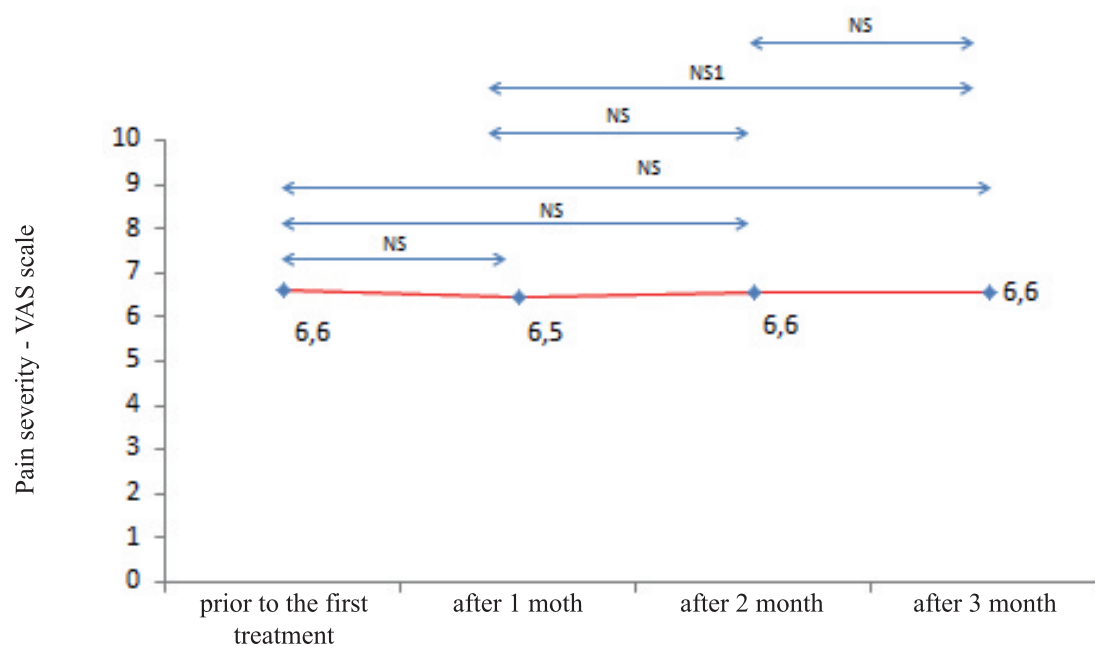


Fig. 5. Pain severity in the control group

A statistically significant decrease in pain severity was noted in the study group in consecutive assessments conducted after the first, the second and the third month.

In the control group no changes in pain severity were noted in consecutive assessments conducted after the first, the second and the third month in comparison to the scores obtained before the first observation.

Discussion

During the past few decades the pace of life has dramatically increased. People have become used to obtain immediate results and often give more value to speed rather than health. A modern woman leads a very busy life and frequently does not have time to properly take care of herself while being constantly on the run. It is not surprising that when women suffer from menstrual pain, which may be exacerbated by stressful lifestyle and inadequate body care, they are willing to reach for an immediate solution in the form of analgesic medications. Analgesics relieve pain and often have relaxant properties thus they offer immediate results. Women are struggling with pain by means of analgesics while at the same time a lot of research raises the issue of side effects in patients regularly taking painkillers [4].

The studies conducted in 2014 showed that menstrual pain was the most common reason behind the use of painkillers by women [5]. Nowadays kinesiotaping becomes increasingly more popular as a treatment applied to reduce menstrual pain in women. In this method the analgesic effect consists of relaxing the muscles, improving the circulation and suppressing pain impulses by stimulating skin receptors [6, 7].

There are various taping techniques applied by physiotherapists which have been the subject of study. They may be applied not only on the lower abdomen but also in the lumbar spine area. Different ways of taping bring the expected outcome and the published results of previous studies support the effectiveness of kinesiotaping application in the reduction of menstrual pain [5, 6, 7]

Summary

Prior to the treatment/observation all women were taking analgesics and anti-inflammatory drugs during menstruation. Due to the application of taping none of the women from the study group had to take medications.

Conclusions

Kinesiology taping is an effective alternative to the application of analgesics in treating menstrual pain.

Adres do korespondencji / Corresponding author



Tomasz Wilk

Ul. Balicka 14B/33, 30-149 Kraków

E-mail: tomeq_w@wp.pl

Piśmiennictwo/ References

1. Yasir S, Kant B, Dar MF. Frequency of dysmenorrhoea, its impact and management strategies adopted by medical students. J Ayub Med Coll Abbottabad. 2014;26(3):349-52
2. Beutel BG, Cardone DA. Kinesiology taping and the world wide web: a quality and content analysis of internet-based information. Int J Sports Phys Ther. 2014;9(5):665-73.
3. Huang CY, Hsieh TH, Lu SC, Su FC: Effect of the Kinesio tape to muscle activity and vertical jump performance in healthy inactive people. Biomed Eng Online. 2011 Aug 11;10:70
4. Bakhtshirin F, Abedi S, YusefiZoj P, Razmjooee D. The effect of aromatherapy massage with lavender oil on severity of primary dysmenorrhea in Arsanjan students. Iran J Nurs Midwifery Res. 2015;20(1):156-60.
5. Kozłowski P., Cuch B., Kozłowska M., Kozłowska K., Jędrzejewska B. Analysis of habits and behaviours related to the use of over-the-counter painkillers. Journal of Education, Health and Sport 2015; 5(3): 174-182
6. Chmielowiec M., Kudelska J., Czy lekarstwo może szkodzić- dwa oblicza Paracetamol, Zeszyty Studenckiego Ruchu. Materiały 16 Sesji Studenckich. Naukowego Akademii. Kół Naukowych Akademii. Świątokrzyskiej. 2007.
7. Śliwiński Z., Krajczy M., Plastrowanie dynamiczne, Podręcznik Kinesiology Taping. Markmed Rehabilitacja s.c. Wrocław, 2014
8. Morris D, Jones D, Ryan H, Ryan CG. The clinical effects of Kinesio® Tex taping: A systematic review. Physiother Theory Pract. 2013;29(4):259.
9. Chaegil L., Yongnam P.,Yongsook B., The Effect of the Kimesio Taping and Spiral Taping on Menstrual Pain and Premenstrual Syndrom, Journal of Physical Therapy Science 2013;25,761-764.
10. Lim C, Park Y, Bae Y. The effect of the kinesio taping and spiral taping on menstrual pain and premenstrual syndrom. J Phys Ther Sci. 2013;25(7):761-4.