EFFECT OF ELECTROACUPUNCTURE VERSUS LOW LEVEL LASER THERAPY ON POST NATAL LOW BACK PAIN

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Background: Postpartum lumbopelvic pain is a serious problem for women, as it has an effect on their performance of the daily living activities so that it has an effect on her family and society**. Purpose:** This study was conducted to compare the effect of Electroacupuncture and Low Level Laser Therapyon post-natal low back pain. **Subjects:** Fifty primegravidae or multigravidae postnatal women complained of low back pain selected randomly from physical therapy department in Al Zahraa University Hospital. Their ages ranged from 25 to 35 years old. Their body mass index was not exceeding 30 kg/m^2. They were medically stable and consented to participate in the study. They did not receive any medical treatment during the research period. They were divided into two equal groups (A&B).Group A: 25 women treated by Electroacupuncture three times a week for sex weeks. Group B: 25 women treated by Low Level Laser Therapythree times a week for sex weeks.**Methods:** Visual analogue scale (VAS) was used to measure pain intensity and Oswestry Disability Questionnaire was used to assess functional disability for both groups (A&B) before and after treatment. **Results:** The results of this study found that, within groups there was a statistically highly significant decrease (P = 0.001) in low back pain intensity and functional disability in both groups (A&B). Between groups the obtained results showed there was no statistically significant difference in low back pain intensity and functional disability pre treatment. But post treatment there was a statistically highly significant difference in low back pain intensity and functional disability between both groups (more decrease in group A). **Conclusion:**Electroacupunctureis more effective in reducing pain and improving functional status by decreasing disability of patients with post natal low back pain than Low Level Laser Therapy.

Key words: Electroacupuncture- Low level laser therapy- Post natal low back pain.

Introduction:

Low back pain (LBP) and pelvic girdle pain are common during pregnancy in many countries. The prevalence rates are variable depending on the criteria used for diagnosing the pain. Several studies have shown that approximately 50 % of women have low back pain during pregnancy. Often the pain disappears within 1 to 3 months after delivery**[1].** Or even up to a year **[2].**However a substantial number of women do not recover after delivery**[1]**.

Postpartum lumbopelvic pain is a serious problem for women, as it has an effect on their performance of the daily living activities so that it has an effect on her family and society **[1].**

Back pain is a common complaint of pregnant women. This is generally characterized as axial or para-sagittal discomfort in the lower lumbar region and is musculoskeletal in nature. This can be due to a combination of mechanical, hormonal, circulatory, and psychosocial factors. Treatment options are often poor, as the cause of back pain is not always fully understood. Furthermore, treatments that are available usually have a low success rate and consist mainly of life style adjustments and bed rest **[3].**

There are many causes for back pain after pregnancy include the physical changes that a women's body undergoes during pregnancy such as weight gains as the weight of the growing baby and uterus also puts pressure on the blood vessels and nerves in the pelvis and back, and emotional stress can cause muscle tension in the back which may be felt as back pain or back spasms, and the muscle separation (the rectus abdominis muscles) due to the uterus expansion, which run from the rib cage to the pubic bone, may separate along the center seam. This separation may worsen back pain **[4].**

The treatment of low back pain includes proper posture, gentle mobilization, stabilization exercises, core strengthening program, chiropractic manipulations as well as osteopathic manipulations, ball stability exercises, and pelvic support belt **[5].**

Electroacupuncture (EA) means stimulation of acupuncture points via electrical current where fine needles are inserted into specific points in the skin **[6].** After serious of EA treatments back pain decreased, swelling subsided, and range of motion improved in patients suffered from sciatica **[7].** Manual acupuncture and EA cause a significant improvement in symptoms of sciatica either on its own or as adjunct

therapy with no loss of benefit after one month **[8].** Manual acupuncture and electroacupuncture are generally regarded as low risk therapies **[9]**.

Laser is a noninvasive, nonionizing, monochromatic, and polarized electromagnetic highly concentrated light beam. LLLT has analgesic, myorelaxant, tissue healing, ligament repair, fibroblast proliferation, biostimulant effects and nonthermally and nondestructively alters cellular function and anti-inflammatory effects. LLLT hasbeen used to treat acute and chronic pain**[10].**

Low level laser therapy is an effective adjunctive or alternative treatment for chronic low back pain with avoidance of systemic drug use. It is an effective method of decreasing pain and reducing disability in chronic low back pain **[11].**

Low level laser therapy (LLLT) is currently used by some physiotherapists as a therapeutic intervention for musculoskeletal disorders such as back pain. Low level laser therapy is a light source treatment that generates light of a single wavelength. It emits no heat, sound, or vibration. Insteadof producing a thermal effect, LLLT may act by non-thermal or photochemical reactions in cells. It is also referred to as photobiology or biostimulation. Low level laser therapy is thought to affect fibroblast function and accelerate connective tissue repair. It has also been reported that LLLT has anti-inflammatory effects due to its action in reducing prostaglandin synthesis. Low level laser therapy lasers can be either visible or invisible **[12].**

LLLT is a noninvasive, fast and effective modality that has been proven in clinical trials to reduce pain, reduce edema and promote healing **[13].**

Subjects, Materials and Methods:

I-Subjects:

Fifty primegravidae or multigravidae postnatal women complained of low back pain selected randomly from physical therapy department in Al Zahraa University Hospital in Cairo, Al Azhar University. The study was conducted from Mach 2018 to October 2018. Their ages ranged from 25 to 35 years old.Their body mass index was not exceeding 30 kg/m^2.All women were primegravidae or multigravidae women complaining from post natal low back pain (2 months after delivery). They were medically stable and consented to participate in the study. They did not receive any medical treatment during the research period. Women with musculoskeletal disorders as disc prolapse, spondylosis, lumbar canal stenosis and spondylysthesis, history of

any medication affects back pain or pelvic pain, any back trauma or any surgery in the back region or the lower extremities are excluded from the study.

Study design:

Two groups pre and post experimental design.They were divided into two equal groups (A&B).

Group A: 25 women treated by electroacupuncture**.**

Group B: 25 women treated bylow level laser therapy.

II-Materials:

1- **Informed consent form.**
2- **Standard weight scale:** It was used to measure weight & height to calculate body mass index (BMI) for each womanfor both groups (A&B) before and after end of treatment.
3- **The visual analogue scale (VAS):** It was used to measure pain intensity for both groups (A&B) before and after end of treatment.
4- **Oswestry Disability Index:** It was used to assess functional disability for each woman of both groups (A&B) before and after the end of the treatment programme.
5- **Electroacupuncture machine phyaction787:**

UNIPHY made in Holland. It was used as treatment for group (A)**.**

6- **Low intensity laser therapy device:**

GYMNA Combi 200L low level laser therapy. It was used as treatment for group (B)**.**

III- Procedures:

All women gave a full explanation of the protocol of the study and consent form signed for each woman before participating in the study.

A) For evaluation:

1- Weight and height measurements:

Weight and height measured while the woman wearing a thin layer of clothes to calculate the BMI according to the following equation: BMI=weight/height^2 (Kg/m^2), for both groups (A&B).

2- Visual Analogue Scale:

Pain assessed through VAS for each woman in both groups (A&B) before starting and after the end of treatment. It is usually a horizontal line, 100mm long, whose ends are labeled as the extreme ("no pain" and "pain as bad as it could be"). The patient is asked to put a mark on the line indicating their pain intensity. Sometimes descriptive, such as 'mild', 'moderate', 'sever', or numbers are provided along the scale for guidance.

3- Oswestry disability questionnaire:

Oswestry disability questionnaire is also known as the Oswestry Low Back Pain Disability Questionnaire, which is an extremely important tool that researchers and disability evaluator's use to measure a patient's permanent functional disability. The test is considered the "gold standard" of low back functional outcome tools. Full instructions about questionnaire will be given for each patient and appropriate time will be allowed to answer all questionnaire questions. For each section the total possible score is 5: if the first statement is marked the section score =0: if the last statement is marked it is = 5.

It is consisted of 60 questions covering 10 sections, which are pain, personal care, lifting, sitting, standing, walking, sex life, sleeping, social life and travelling.

B) For treatment:

Group (A):

It consisted of twenty five women who were treated by electroacupuncture, three times per week for sex weeks

Electroacupuncture:

An electroacupuncture device model PHYACTION787 made in Holland. The device provides biphasic square wave form. The chosen wave form was dense-disperse wave form which is slow, fast and alternating patterns of stimulation **[14]**. Low frequency interspersed with periods at higher frequencies. Dense frequency was 100 Hz, pulse duration was 0.5ms, disperse frequency ranged from (10±3) cycles/min to (50±10) cycles/min and maximum output pulse amplitude: 40±10 volts.

Equipment preparation:

The area reserved to the electroacupuncture **(**EA) treatment was kept tidy and well arranged. Theelectroacupuncture device was placed on a trolley of a suitable height near to the bed to be easily accessible to the operator .

Subject position: The patient was side lying position.

Therapist position: The therapist was standing at the level of the back.

Application of Electroacupuncture (EA):

Skin was cleaned with an alcoholic swab. Shaft surface electrodes were put on the acupuncture points. The intensity was increased slowly up to a tolerable non painful´pounding´ sensation level. The treatment lasted for 15 minutesand the intensity of the EA was readjusted, if necessary, after 5 minutes tomaintain the desired sensation **[15]**.

Treatment was carried out on alternate days for 18 sessions, 3 times /week for 6weeksand time of sessions 15 minute.

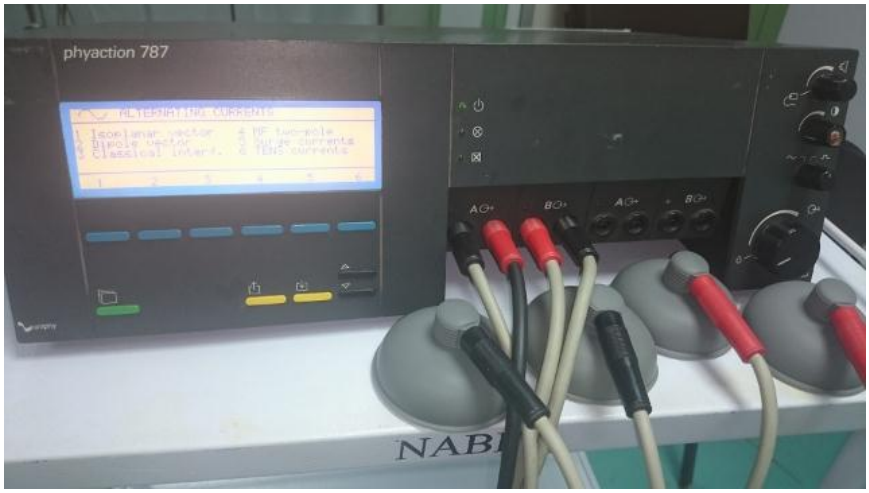

Fig. (1): Electro stimulation machine.

Electroacupuncture was applied on two points:

1. UB 25: Located one and a half cun lateral to the lower border of the spinous process of the fourth lumbar vertebra (at the level of the upperborder of the iliac crest).

2. UB 40: Located at the midpoint of the transverse popliteal crease.

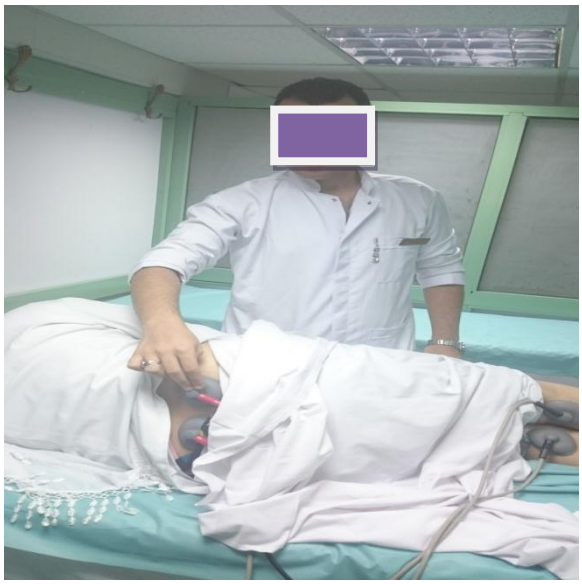

Fig. (2): Application of Electroacupuncture.

Group (B):

It consisted of twenty five women who were treated by infrared laser for 20 minutes, three times per week for sex weeks, with the following parameters: wavelength was 904 nm, frequency was 3000 Hz, power was 70 mW, power density of 20 mW/cm^2 and dose of 3 J/cm^2, treatment time 150 sec on each point.

Application of laser:

Both the therapist and the patient were wearing protective goggles during treatment. Patient was lying prone. The therapist scrubbed the lumbar paraspinal muscles with an alcohol-soaked gauze pad. Each woman was irradiated for 150 seconds at two sites simultaneously at each of four equally spaced levels (A total of 8 points) along the paravertebral region L2 to S3 paraspinal tissues. All women were irradiated by a single laser probe in contact mode(Fig. 3).

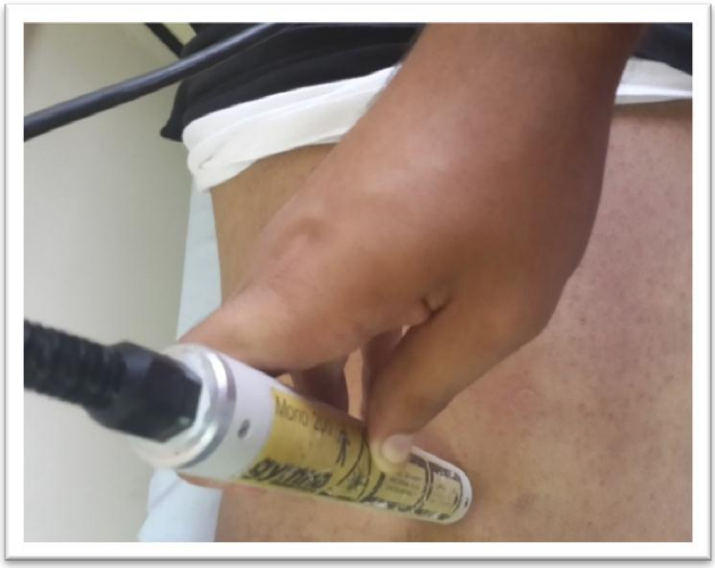

Fig. (3): Low level laser application.

Statistical analysis:

Results were expressed as mean and standard deviation (SD). Comparison between mean values of different variables in the two studied groups was performed using either unpaired t test or Mann-Whitney U test whenever it was appropriate. Comparison between pre- and post-treatment within the same group was performed using either paired t test or Wilcoxon Signed Ranks test whenever it was appropriate. Statistical Package for Social Sciences (SPSS) computer program (version 22 windows) was used for data analysis. P value less than or equal to 0.05 was considered significant and < 0.01 was considered highly significant.

Results:

I-General characteristics of the patients:

There was no statistical significant difference between mean value of age, height, weightand BMI between groups A and Bwith T value = (1.317, -1.057, -0.950and -0.189) respectively and P value = (0.196, 0.297,0.348 and0.851) respectively (Table.1).

Table (1): General characteristics of the two studied groups.

	Group A	Group B	t value	P value
Age (yrs.)	25.90 ± 3.87	27.55 ± 4.06	1.317	0.196(NS)
Height (cm)	166.80 ± 4.62	165.30 ± 4.35	-1.057	0.297(NS)
Weight (kg)	75.40 ± 4.32	73.80 ± 6.17	-0.950	0.348(NS)
BMI (kg/m^2)	27.15 ± 2.07	27.02 ± 2.22	-0.189	0.851(NS)

Data are expressed as mean ± SD.NS= p> 0.05= not significant.

II-Visual analogue scale (VAS):

(A) Within groups:

There was a statistical highly significant decrease in the mean value of VAS measured post-treatmentwhen compared with its corresponding value in pre-treatment in both groups A and B with t value = (14.658, 11.804respectively)and p value =(0.001, 0.001respectively). The percentage of improvement was higher in group A (52.5%) than in group B (27.85%) (Table. 2).

B) Between groups:

Pre-treatment, there was no statistical significant difference between the mean value of VAS of both groups A and group B with t value = -0.227and p value = 0.822. Post-treatment there was a statistical highly significant difference between the mean value of VAS of group B when compared with its corresponding value in group A with t value = 4.265and p value = 0.001 (more decrease in group A) (Table 2).

Table (2): Inter and intra-group comparison between mean values of VAS in the two studied groups measured before and after treatment.

	Group A	Group B	$t^{\#}$ value	P value
Beforetreatment	8.00 ± 1.49	7.90 ± 1.29	-0.227	0.822 (NS)
Aftertreatment	3.80 ± 1.70	5.70 ± 1.03	4.265	0.001 (HS)
Mean difference	4.20	2.2		
% change	52.5%	27.85%		
$t^{\#\#}$ value	14.658	11.804		
p value	0.001 (HS)	0.001 (HS)		

Data are expressed as mean ± SD.$t^{\#}$ value= unpaired t test.$t^{\#\#}$ value= paired t test.

NS= p> 0.05= not significant.S= p< 0.05= significant.

III-Oswestry disability questionnaire:

(A) Within groups:

There was a statistical highly significant decrease in the mean value of Oswestry disability questionnaire measured post-treatment when compared with its corresponding value in pre-treatment in both groups A and B with the Z value = (-3.923, -3.925 respectively) and p value = (0.001, 0.001respectively). The percentage of improvement was higher in group A (45.79%) than in group B (27.52%) (Table. 3).

(B) Between groups:

Pre-treatment, there was no statistical significant difference between the mean value of Oswestry disability questionnaire of both groups A and group B with the Z value = -0.203and p value=0.839. Post-treatment there was a statistical highly significant difference between the mean value of Oswestry disability questionnaire of group B when compared with its corresponding in group A with the Z value = -3.481and p value = 0.001 (Table. 3).

Table (3): Inter and intra-group comparison between mean values of Oswestry disability questionnaire in the two studied groups measured before and after treatment.

	Group A	**Group B**	**$Z^{\#}$ value**	**P value**
Beforetreatment	50.45 ± 6.39	50.15 ± 8.68	-0.203	0.839(NS)
Aftertreatment	27.35 ± 6.85	36.35 ± 6.71	-3.481	0.001 (HS)
Mean difference	23.1	13.8		
% change	45.79%	27.52%		
$Z^{\#\#}$ value	-3.923	-3.925		
p value	0.001 (HS)	0.001 (HS)		

Data are expressed as mean ± SD.$Z^{\#}$ value = Mann-Whitney test.$Z^{\#\#}$ value = Wilcoxon signed ranks test.NS= p> 0.05= not significant.S= p< 0.05= significant.

Discussion:

About 24% to 90% of women experience low back or pelvic-region pain when they are pregnant. Many women find that this pain goes away when the baby is born. However, more than a third of women still have pain 1 year after giving birth. Physical therapy during and after pregnancy can help decrease low back and pelvic pain. Common treatment options include education, exercise therapy, manual therapy, braces, or a combination of these treatments. Learning new ways to perform home and work activities as well as relaxation techniques can help ease the pain**[16].**

Acupuncture is increasingly used as alternative or complementary therapy for treatment of pain with low risk of serious adverse effect **[17]**. Electroacupuncture was superior to Non-Steroidal Anti Inflammatory (NSAIDS) compared with conventional medications **[8]**.

Low level laser therapy (LLLT) is currently used by some physiotherapists as a therapeutic intervention for musculoskeletal disorders such as back pain. Low level laser therapy is a light source treatment that generates light of a single wavelength. It emits no heat, sound, or vibration. Instead of producing a thermal effect, LLLT may act by non-thermal or photochemical reactions in cells. It is also referred to as photobiology or biostimulation. Low level laser therapy is thought to affect fibroblast function and accelerate connective tissue repair **[12].**

This study was conducted to compare the effect of electroacupunctureand Low level laser therapy on post-natal low back pain.

Fifty primegravidae or multigravidae postnatal women complained of low back pain selected randomly from physical therapy department in Al Zahraa University Hospital in Cairo, Al Azhar University. The study was conducted from March 2018 to October 2018. Their ages ranged from 25 to 35 years old.Their body mass index was not exceeding 30 kg/m^2.All women were primegravidae or multigravidae women complaining from post natal low back pain (2 months after delivery). They were medically stable and consented to participate in the study. They did not receive any medical treatment during the research period. They were divided into two equal groups (A&B).Group A: 25 women treated by electroacupuncture three times a week for sex weeks.Group B: 25 women treated bylow level laser therapythree times a week for sex weeks.

Visual analogue scale (VAS) was used to measure pain intensityand Oswestry Disability Questionnaire was used to assess functional disability for both groups (A&B) before and after treatment.

The results of this study found that, within groups there was a statistically highly significant decrease (P = 0.001) in low backpain intensity and functional disabilityin both groups (A&B). Between groups, the obtained results showed there was no statistically significant difference in low back pain intensity and functional disability pre treatment. But post treatmentthere was a statistically highly significant difference in low back pain intensity and functional disability between both groups (more decrease in group A).

So,electroacupunctureis more effective in reducing pain and improving functional status by decreasing disability of patients with post natal low back pain than low level laser therapy.

Results of this study found that there was a highly significant decrease in pain intensity and functional disability index in group (A) which treated by electroacupuncture.

Electrical stimulation of acupuncture points is considered to increase acupuncture analgesia, decrease pain intensity and improve psychological well-being, activity, and sleep in chronic low back pain patients**[18]**.

Transcutaneous electrical nerve stimulation (TENS), originally based on the gate-control theory of pain, is widely used for the treatment of chronic low back pain. Despite its wide use and theoretical rationale, there appears at first glance little scientific evidence to support its use. Transcutaneous electrical nerve stimulation (TENS) and acupuncture-like transcutaneous electrical nerve stimulation (ALTENS) for chronic low back pain management have experienced a tremendous growth over the past 25 years. There is evidence from the data available that TENS/ALTENS reduces pain and improves range of motion in chronic back pain patients, at least in the short term**[19]**.

Yeung et al., [20] compared the effectiveness of transcutaneous electrical nerve simulation (TENS) with EA in the treatment of chronic LBP. It was shown that EA produced a greater reduction in pain scores than TENS. Low-frequency (2Hz) EA was

significantly better than higher-frequency (80Hz) EA needle acupuncture alone in decreasing chronic LBP and improved the range of movement at the spine.

Results of this study are explained by those of **Madsen et al., [21],** who stated that the C primary afferent polymodalnociceptor projects to Substantia Gelatinosa (SG) cells in the superficial dorsal horn; these generate further impulses that pass to, or perhaps disinhibit, wide dynamic range (WDR) (or convergent) cells whose axons pass up to the brain in the spinoreticular tract where they are eventually interpreted as painful.

Results of this study agreed with those of **Linde et al., [22]**, who found that the combination of EA and back exercise can be an effective option in the treatment of pain and disability associated with chronic back pain

The results of this study also agreed with those of **[20]**, who found that acupuncture may in many instances help to reduce these pains effectively with fewer complications. Acupuncture is an established adjuvant analgesic modality for the treatment of chronic pain. Results suggest that acupuncture at the most painful point gives immediate relief of low back pain.

The results of this study supported by those of **Thomas et al., [23],**who concluded that there is reasonable scientific evidence exists for the alleviation of myofacial pain, neck pain, shoulder pain, elbow pain, low back pain, and knee pain when using acupuncture treatment. Acupuncture can be used for treating rheumatoid arthritis, but it should be only in context of a single joint that is extremely painful and unresponsive to other measures. The approach to treatment would be that of treatment of the local joint, in late stage, particularly in patients with gastrointestinal disease, where anti-inflammatory drugs cannot be used, acupuncture may be help intractable pain and stiffness prior to orthopedic surgery.

The results of this study also supportedby**Lu et al., [20],**who studied different modes of acupuncture for back pain, indicated that low frequency electroacupuncture may have a more prolonged effect in reducing pain than either manual stimulation of surface electrode or high frequency electroacupuncture.

Results of this study found that there was a highly significant decrease in pain intensity and functional disability index in group (B) which treated by low level laser therapy.

Sprains, tenosynovitis, hematomas, capsulitis, bursitis, osteoarthritis, and rheumatoid arthritis all these can be treated successfully with LLLT due to its anti-inflammatory action. Literature showed that prostaglandin production is affected by laser stimulation, thus accelerating resolution of the inflammation**[25]**.

Low level laser therapy with a wave length of 904 nm and dosage 1-4 Joules is used to decrease inflammation and pain and promote circulation in a depth of 30-50 mm**[26]**.

Results of this study agreed with **Konstantinovic et al., [27]**,who found that treatment of acute LBP with radiculopathy at 904-nm LLLT at a dose of 3 J/point has shown better improvement in local movements, more significant reduction in pain intensity and related disability, and improvement in quality of life.

Results of this study also agreed with **Djavid et al., [11],** who studied the effect of laser combined with exercise compared to exercise alone in cases of low back pain, the trial showed that low level laser therapy plus exercise could decrease pain, increase lumbar flexion, and reduce disability more than exercise alone in the long-term.

The results supported by **Gur et al., [28],**who compare low level laser therapy, exercise and laser combined with exercise to determine whether laser therapy is useful or not for the therapy of chronic LBP, revealed that LLLT seemed to be an effective method in reducing pain and functional disability in chronic LBP.

The results also supported by **Jovicic et al., [29]**, who found that LLLT plays a significant role in reducing pain and functional disability in the treatment of LBP with radiculopathy.

The results of this study disagreed with that of **Yousefi-Nooraie et al., [12],** who reported that LLLT, when contrasted to a sham treatment may be beneficial for pain relief and improved disability in patients with sub-acute or chronic non-specific low-back, although treatment effects are small. However, when LLLT is added to exercise and compared to exercise therapy, either with or without sham treatments, there

appears to be little or no difference between the groups in pain and disability. Therefore, based on our findings, LLLT should not be substituted for other beneficial interventions.

Also the results disagreed with that of **Saime et al., [10]**, who found in their study that although all groups showed improvements on assessment parameters, they failed to show the superiority of laser therapy over placebo laser on pain severity and functional capacity in patients with acute and chronic LBP.

It is the first study which compared between the effect of electroacupunctureand low level laser therapy on post natal low back pain. Results found that both electroacupuncture and low level laser therapy are effective in decreasing pain intensity and functional disability of post natal low back pain. But electroacupuncture is more effective than low level laser therapy.

Conclusion:

It can be concluded that, electroacupuncture is more effective in reducing pain and improving functional status by decreasing disability of patients with post natal low back pain than low level laser therapy.

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المستخلص

الهدف:أجريت هذه الدراسة لمقارنة تأثيرالوخز الكهربائي بالإبر مقابل الليزر منخفض الشدة على آلام أسفل الظهر بعد الولادة.

الأشخاص: شارك في هذه الدراسة خمسون سيدة بكرية أو متعددة الولادة تشكو من آلام أسفل الظهر. تم إختيارهن عشوائيا من قسم العلاج الطبيعى فى مستشفى الزهراء الجامعى بالقاهرة،جامعة الأزهر. تراوحت أعمارهن بين ٢٥-٣٥عاماً ومؤشر كتلة أجسامهن لاتزيد عن٣٠ كيلوجرام/مترمربع. حالتهن الطبية كانت مستقرة و لم يتعاطين أى علاج دوائى أثناء فترة البحث.

تم تقسيمهن إلى مجموعتين متساويتين فى العدد:المجموعة (أ) عولجت بإستخدامالوخز الكهربائي بالإبرثلاث جلسات أسبوعياً لمدة أربعة أسابيع ،ثلاث جلسات أسبوعياً لمدة أربعة أسابيعبينما المجموعة (ب) عولجت بإستخداماالليزر منخفض الشدة ثلاث جلسات أسبوعياً لمدة ستة أسابيع ،ثلاث جلسات أسبوعياً لمدة ستة أسابيع.

الطرق: تم قياس شدة آلام أسفل الظهرعن طريق بيان تحديد درجة الألم،ومقياس عجز أوسويسترى لتقييم الاعاقة الوظيفية للمجموعتين (أ ، ب) قبل و بعد العلاج.

النتائج: أوضحت نتائج هذه الدراسة وجود نقصان ذات دلالة إحصائية عالية فى شدة آلام أسفل الظهر و الاعاقة الوظيفية فى كلتا المجموعتين (أ،ب).

بمقارنة المجموعتين(أ،ب) معاأوضحت نتائج هذه الدراسة عدم وجود فرق ذو دلالة احصائية بين المجموعتين (أ،ب) فى شدة آلام أسفل الظهر و الاعاقة الوظيفية قبل العلاج. و لكن بعد العلاج أوضحت النتائج وجود فرق ذو دلالة احصائية عالية فى شدة آلام أسفل الظهر و الاعاقة الوظيفية بين المجموعتين (أ،ب) (نقصان أكثر فى المجموعة أ).

الخلاصة:وهكذا يمكنأن نستخلص أن الوخز الكهربائي بالإبرأفضل فى تقليل شدة آلام أسفل الظهر و الاعاقة الوظيفية منالليزر منخفض الشدة لدى السيدات بعد الولادة.

الكلمات الدالة:الوخز الكهربائي بالإبر -الليزر منخفض الشدة –آلام أسفل الظهر بعدالولادة.