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Transcutaneous electrical nerve stimulation versus electrical stimulation of acupoints for postoperative pancreatectomy pain.

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B.SC. "PHYSICAL THERAPY"

التنبيه الكهربي عبر الجلا مقابل تأثير التنبيه الكهربي لنقط الإبر الصينية على ألم ما بعد استئصال البنكرياس

ورد مقد من

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Pancreatctomy is the surgical removal of all or part of the pancreas. Several types of pancreatectomy exist, including panceaticoduodenectomy (Whipple procedure), distal pancreatectomy, segmental pancreatectomy, and total pancreatectomy. These procedures are used in the management of several conditions involving the pancreas, such as benign pancreatic tumors, pancreatic cancer, and pancreatitis

• Surgical pain is due to inflammation from tissue trauma (i.e., surgical incision, dissection, burns) or direct nerve injury (i.e., nerve transection, stretching, or compression). Management of postoperative pain relieves suffering and leads to earlier mobilization, shortened hospital stay, reduced hospital costs, and increased patient satisfaction. Pain control regimens should not be standardized; rather, they are tailored to the needs of the individual patient, taking into account medical, psychological, and physical condition; age; level of fear or anxiety; surgical procedure; personal preference; and response to agents given. The major goal in the management of postoperative pain is minimizing the dose of medications to lessen side effects while still previding adequate analgesia

Stimulation is used to provide analgesia in many different ways, via electrical current, heat, needling or pressure. Transcutaneous electrical nerve stimulation (TENS) and acupuncture are the most commonly employed stimulation-based therapies for acute and chronic pain management. TENS stimulates the release of endogenous opioids, thereby dampening pain transmission at spinal and supraspinal levels. It is a non-invasive, inexpensive and effective non pharmacological addition to conventional pain therapy. TENS is easy to apply and helps patients to be actively involved in their pain management. This empowerment can enhance the positive analgesic effect

The clinical practice of acupuncture is growing in popularity world-wide. In parallel, interest in the scientific basis of acupuncture has been increasing, as reflected by a dramatic rise in the number of scientific publications on acupuncture and related techniques(ART) in the recent decade. Acupuncture is a potent form of sensory stimulation. Most scientific studies of acupuncture have focused on sensory stimulation as the main mechanism

Purpose of the study

Purposes of this study were

- (1) To assess the therapeutic benefits of the Para-Incisional application of transcutaneous electrical nerve stimulation on pain intensity of post pancreatectomy cases.
- (2)To evaluate the therapeutic efficacy of stimulation of acupoints on pain intensity of post pancreatectomy cases.
- (3)To compare between both pain control modalities.



Subjects

Thirty patients who recently have undergone a pancreatectomy operation participated in this study. They were randomly assigned into two equal groups, group (A) and group (B). This study was conducted in the national cancer institute NCI Egypt to compare the effect of TENS and stimulation of the acupoints on the postoperative pancreatectomy pain

Patients groups.

Patients were randomly divided into 2 equal groups:

Group A (TENS application group)

This group were composed of fifteen patients who recently undergone a pancreatectomy operation; they were enrolled in a program of TENS (applied paraincisionally) once a day for a course of ten sessions.

Group B (Electrical stimulation of acupoints group)

This group were composed of fifteen patients who recently undergone a pancreatectomy operation; they were enrolled in a program of stimulation of acupuncture points for ten sessions (one session/day).

Equipment Used

Equipment Used

Measuring Equipment Therapeutic equipment

Visual Analogue Scale (VAS).

Patient:		Date:	
1000 D D D D D D D D D D D D D D D D D D	your pain today ? al mark on the line below	to indicate how bad	you feel your pain is
No pain			Very severe pain

. Elexcess twenty ten device was used for blood serum analysis to measure the serum cortisol level



Therapeutic equipment



TENS unit.



Electroacupuncture Stimulation Device.

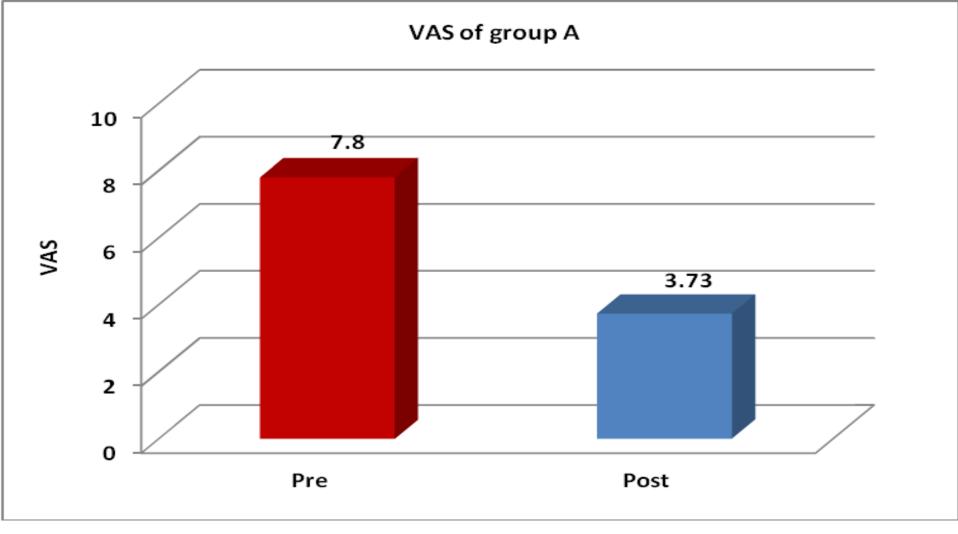
Treatment procedures



Procedures of TENS application..

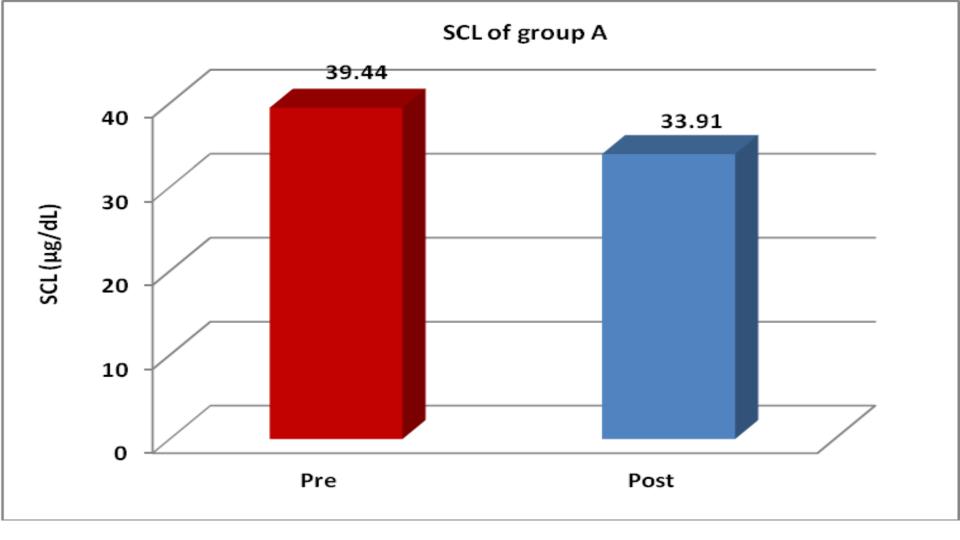


procedures of the electrical stimulation of acupoints.



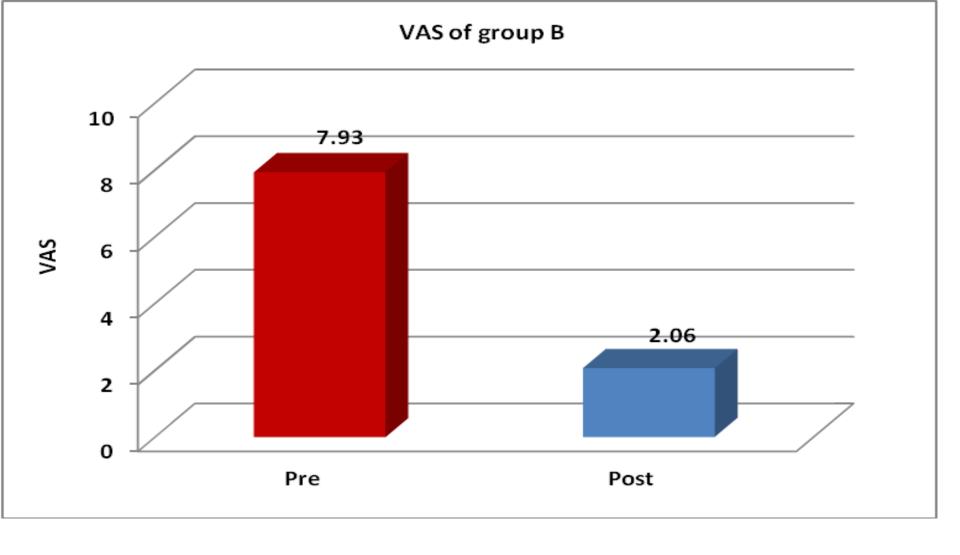
Periods of evaluation.

Bars representing the mean values of VAS at pre-treatment and post treatment of TENS group (group A).



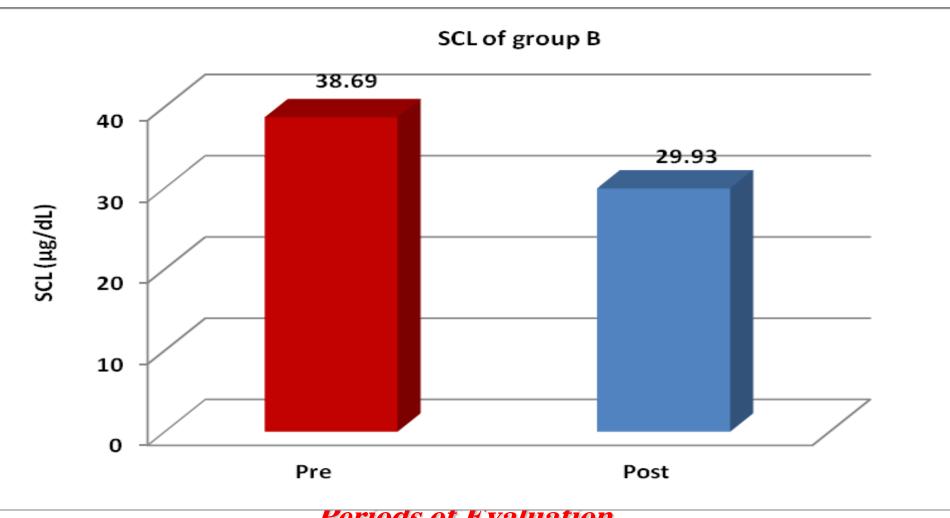
Periods of Evaluation.

Bars representing the mean values of SCL at pre-treatment and post treatment of TENS group (group A).



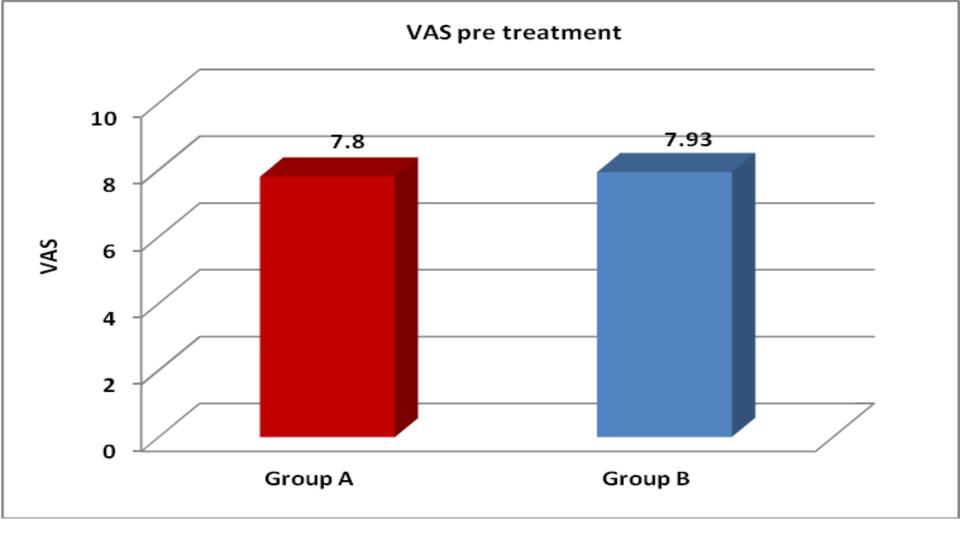
Periods of evaluation.

Bars representing the mean values of VAS at pre-treatment and post treatment of accepting group (group B).



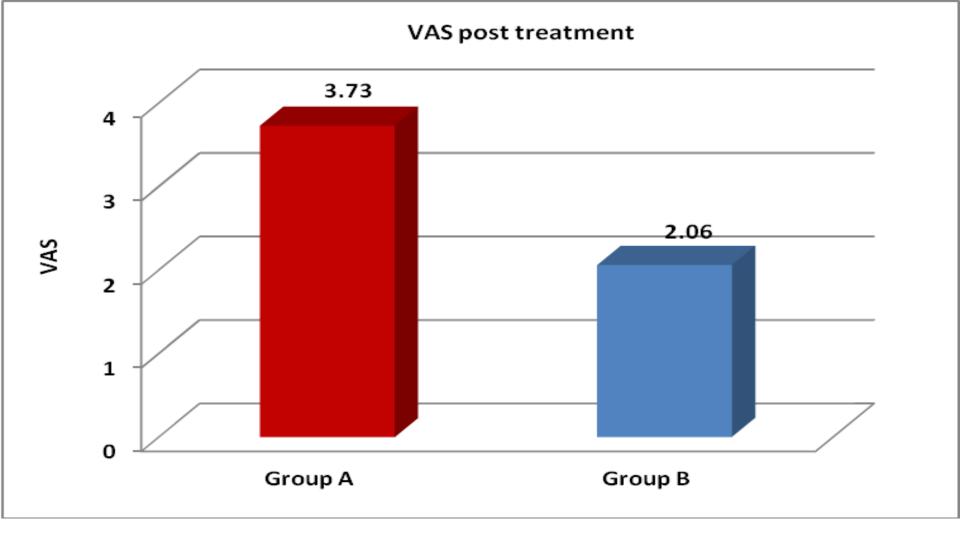
<u>Periods of Evaluation.</u>

Bars representing the mean values of SCL at pre-treatment and post treatment of acupoints group (group B).



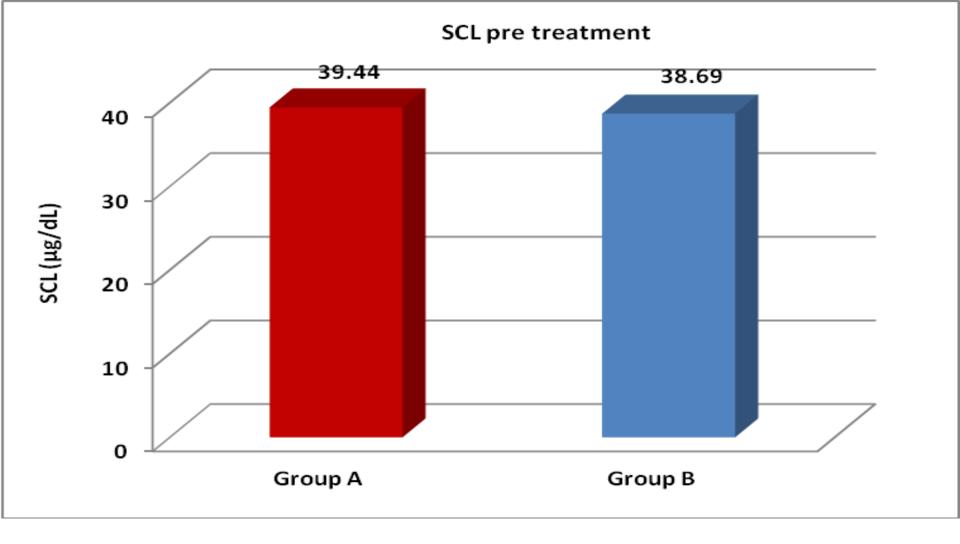
Periods of evaluation.

Bars representing the mean values of VAS pre-treatment of both groups



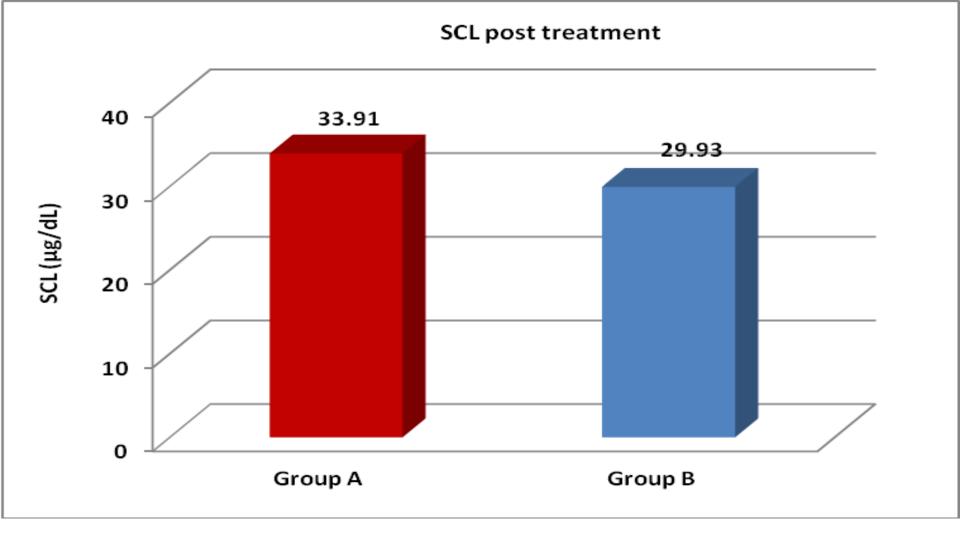
Periods of evaluation.

Bars representing the mean values of VAS post-treatment of both groups (A and B).



Periods of evaluation.

Bars representing the mean values of SCL pre-treatment of both groups (A and B).



Periods of evaluation.

Bars representing the mean values of SCL post-treatment of both groups (A and B).



Significant differences, between group (A) (TENS application) and group (B) (Acupoints electrical stimulation), which were in the form of a highly significant decrease in the VAS and SCL, were consistent with those observed and recorded by Akechi et al., 2001; Ramsay, 2000; Munoz et al., 2014; Machado et al., 2013 and Park et al., 2008.

Eventually, after the discussion of the results and according to reports of the previous investigators in fields related to this study, it can be claimed that the application of both the acupoints electrical stimulation and TENS had a valuable effects in decreasing the post pancreatectomy pain as evidenced by the highly significant decrease in VAS and SCL, but the acupoints electrical stimulation was more beneficial than TENS.



The results of this study supports the expectation that using both the acupoints electrical stimulation and TENS had a valuable effects in decreasing the post pancreatectomy pain as evidenced by the highly significant decrease in VAS and SCL, but the acupoints electrical stimulation was more beneficial than TENS.

