

## COMPARATIVE EFFICACY OF VARIOUS METHODS OF PHYSICAL TREATMENT GIVEN TO A SELECTED GROUP OF PATIENTS PRESENTED WITH NON SPECIFIC LOW BACK PAIN

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### Abstracts

This prospective randomized clinical trial was carried out in a selected group of patients who attended and presented with non specific low back pain (LBP) in the outpatient department of Physical Medicine and Rehabilitation in IPGMR ( now BSMMU) during December 1996 to August 1997. Sixty patients categorized as non specific LBP and were randomly divided into three equal treatment groups by the way of lottery. First group received SWD, second group received exercise therapy and third group was the control. Patients of all groups received equal doses of same NSAID and similar activity of daily living instructions. After 6 weeks treatment 33.33% patients in shortwave diathermy group, 26.31% patients in exercise group and 23.29% patients in control group were become symptomless. Rest of the patients in all groups showed significant improvement. In which 66.66% patients in shortwave diathermy group, 73.68 % patients in exercise group and 76.47 % patients in control group become improved. Short-wave diathermy and exercise therapy were found to be effective and superior to control group. From the present study, it may be concluded that short wave diathermy had better efficacy than exercise group in the management of non-specific LBP.

### Key words

low back pain, short wave diathermy, exercise.

### Introduction

Low back pain (LBP) is a ubiquitous health problem<sup>1</sup>. Surveys suggest the prevalence of back pain in the adult population is 14-31%, with a 60-80% life time incidence and 70% suffering three or more recurrences<sup>2</sup>. In most cases of back pain no underlying disease can be established and the causes

of the complaints remain unknown<sup>3</sup>. The etiology of a painful back encompasses a wide range of possibilities. As many as 90% of patients with back pain have a mechanical reason for their Pain<sup>4</sup>. The most common diagnosis in cases of acute LBP are non-specific (e.g. lumbosacral strain & sprain)<sup>5</sup>. Non-specific LBP is second only to the common cold as a cause of self limiting symptoms and disability in the community<sup>6</sup>.

The era of routine radiography, strict bed rest, corsets and traction has passed. It has been replaced by early return to normal activities and greater emphasis on exercise to prevent recurrences or to treat chronic pain<sup>7</sup>. No single form of therapy is effective for all form of back pain. Physical therapies including various exercise program, traction, manipulation, massage, TENS (Trans cutaneous electrical nerve stimulation) thermo-therapy are employed singly or in combination. In one survey of physiotherapy departments SWD (Short wave diathermy) appeared to the most popular therapy for non-specific LBP<sup>8</sup>. Evidence is increasing that exercise programs are effective, although the optimal regimen has yet to be defined and may vary from patient to patient<sup>9</sup>.

It is essential to fit the particular exercise to the directional preference of the individual. Such approach was documented as at least for short term effectiveness, one on the centralisation phenomenon itself<sup>10</sup> and the other on the effectiveness of Mc Kenzie therapy<sup>11</sup>. In our country, although many people in the community is suffering from non specific LBP. A paucity of information exists in our country regarding exact role of various physiotherapeutic measures in the management of nonspecific LBP. In this study, an attempt has been made to see the effect of various physical treatment modalities on nonspecific LBP.

### Materials And Methods

This prospective clinical trial was carried out in a selected group of patients who attended and presented with non specific LBP in the outpatient department of physical medicine and rehabilitation BSMMU during 1st December 1996 to 31st August 1997. Details history was taken from each patient with a view to obtaining maximum possible

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information regarding the aetiology of LBP. Non specific LBP patients were isolated and 60 patients were categorized as non specific LBP. They were selected for trial into 3 treatment groups. Those patients with history of LBP for more than 2 weeks but less than 1 year duration and only those who were resident of Dhaka city were included in the study. Patients aged above 60 years and those with red flags (patients having malignancy, tuberculosis & bleeding disorders) or specific causes were excluded from the study. Six patients were dropped out from the study because they can not follow the treatment allocated to them properly. Informed consent was obtained from all participants after discussion of the trial protocol.

Patients suitable for therapeutic trial were divided into three groups:

- Group- A : Shortwave diathermy group
- Group- B : Exercise group
- Group-C : Control group

#### **Group-A : Shortwave diathermy group**

20 patients among the study population were selected in this group and shortwave diathermy for 15 minutes thrice weekly for 6 weeks were given . No form of therapeutic exercise were prescribed to them.

#### **Group-B : Exercise group**

20 patients were included in this group. They were participated in physical training composed of general mobilizing and muscle strengthening exercises and were supervised fortnightly for 6 weeks and instructed to continue their exercise at home regularly. Patients of this group were not allowed any form of thermotherapy during the study period.

#### **Group-C: Control Group**

Equal number of patients as above two groups were taken in this group. Neither thermotherapy nor exercise therapy were given to them.

Activities of daily living instructions were given to all the three groups patients. Patients in all groups were allowed to take similar doses of NSAIDs for same period. ( Naproxen 250 mg twice daily for six weeks along with Omeprazole). Patients were evaluated fortnightly for 6 weeks. During the trial 3 patients from the control group and one patient from exercise group and two patient from diathermy group were dropped out.

#### **Assessment tools**

Improvement rating was done by Visual Analogue Scale

(VAS) for pain only. Visual analogue scale is an arbitrary scale of 10 cm with 10 mark as extreme of pain and 0 mark as no pain.

#### **Statistical Methods**

All the data is compiled and coded manually in black and white. Statistical analysis of improvement of pain were tabulated properly and the results were expressed in percentage.

#### **Results**

A total of 60 patients of Non specific LBP were included in the study in which 66 % were male and 34 % were female. Six patients were dropped out from the study because they can not attend regularly for the treatment allocated for them. After 6 weeks treatment 33.33 % Patients in shortwave diathermy group, 26.31% patients in exercise group, 23.29 % patients in control group were symptomless. Rest of the patients in all groups showed significant improvement. 66.66 % patients in shortwave diathermy, 73.68% patients in exercise group and 76.47 % patients in control group showed statistically significant improvement in pain score .

Table - I : Sex distribution of patients included in the study

| Sex    | Number of patients | Percentage |
|--------|--------------------|------------|
| Male   | 40                 | 66         |
| Female | 20                 | 34         |
| Total  | 60                 | 100        |

Table -II: Number of patients included and drop out

|  |    |
|--|----|
| Total number of patients admitted                | 60 |
| Number of patients completed 6 weeks study       | 54 |
| Patients not attended and could not be contacted | 4  |
| Patients failed to attend regularly              | 2  |

#### **Discussion**

The present study showed the effect of various modalities of physical therapy on non-specific low back pain. The study showed 50 % patients in the shortwave diathermy group, 40 % patients in exercise group and 30 % patient in control group were improved after 2 weeks treatment. Zaman MM<sup>12</sup> reported 26.66 % patients in shortwave diathermy group were improved while no

Table -III: Improvement after treatment at the end of 6 weeks calculated with VAS (n= 54).

| Categories                        | Group A<br>N= 18<br>No (%) | Group B<br>N=19<br>No (%) | Group C<br>N=17<br>No (%) |
|-----------------------------------|----------------------------|---------------------------|---------------------------|
| Patients with Complete recovery   | 6 (33.33 %)                | 5 (26.31 %)               | 4 (23.29 %)               |
| Patients with incomplete recovery | 12 (66.66 %)               | 14 (73.68 %)              | 13 (76.47 %)              |
| Total                             | 100 %                      | 100 %                     | 100 %                     |

n=Total number of patients ( study subjects)

N= number of patients in each group

improvement was observed in exercise or placebo group after 2 weeks treatment. In the current study after 4 weeks treatment with shortwave diathermy 60 % patients were improved while Zaman MM found same (66.66 %) improvement among the patients treated with shortwave diathermy.

In the present study 73.68 % patients in the exercise group improved after 6 weeks. This is in agreement with Kraus and Naglar<sup>13</sup>. They found that 80 % of their patients who general mobilizing, strengthening and stretching exercises reported improvement after 6 weeks. Pengel HM in the systematic review of conservative interventions for sub acute low back pain shows that manipulation, exercise combined with other treatment might be effective<sup>14</sup> Zaman MM reported 64.71 % patients were improved after 6 weeks exercise therapy.

After completion of 6 weeks treatment 33.33 % Patients in shortwave diathermy group, 26.31 % patients in exercise group, 23.29 % patients in control group were symptomless. Rest of the patients in all groups showed significant improvement. 66.66 % patients in shortwave diathermy, 73.68 % patients in exercise group and 76.47 % patients in control group showed statistically significant improvement in pain score .

### Conclusions

From the present study it may be concluded that both the SWD and exercise is effective in Non-specific LBP and are superior to control group. But SWD showed better efficacy than exercise group in this study.

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