

Clinical Trial of Galvanoplast
Galvanic Electrode @ 10 μ A - Direct Current
Circa 1997
Dr. Mario Bergner

Problem:

Direct currents are known to have effects on excitable structures. Their therapeutic use has lost significance on account of the electrolytic skin damage caused by the commonly applied 1 mA currents. The present study is concerned with the effect and innocuousness of direct currents of around 10 μ A applied throughout a treatment period of 48 hours.

Method:

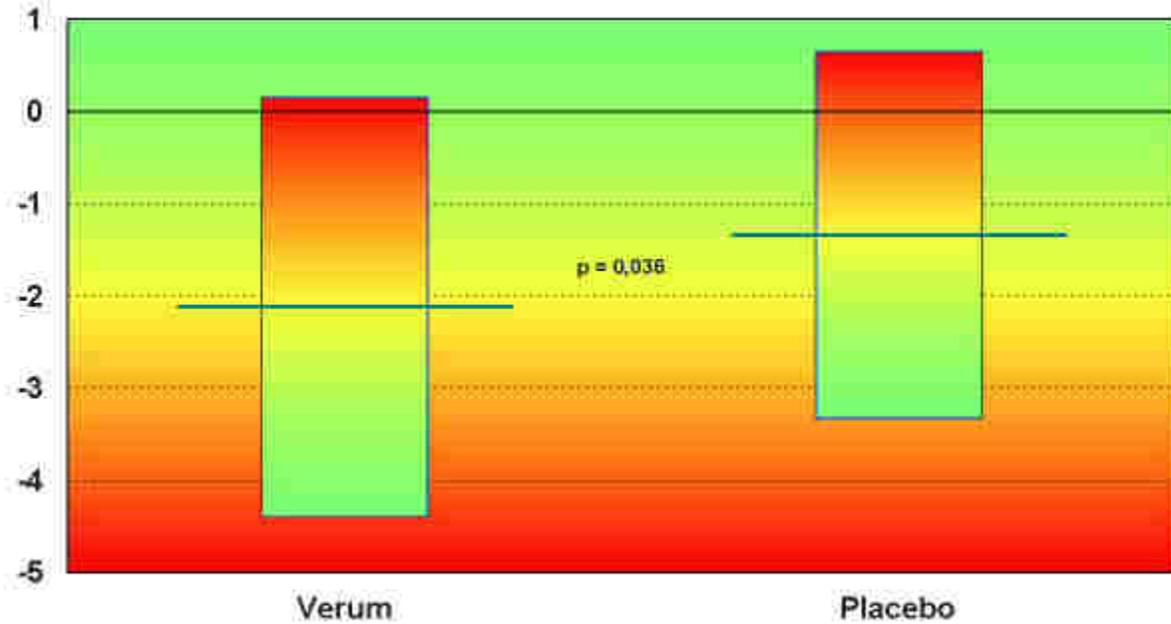
In a placebo controlled randomized double blind study, 135 patients with cervical spine syndrome were treated with an auto active "galvanic healing plaster" which was applied with one aluminum and one copper electrode to the trigger points of the descending part of the trapezius muscle. While the PLACEBO group was given a non-conductive connection cable, the VERUM Group did not perceive the current on account of its low intensity.

Results:

In the VERUM group, pain reduction as measured by the visual analogue scale (VAS) was significantly more pronounced ($p=0,036$). Significant differences with more favorable results for the VERUM group were also found in the subjective assessment of the reduction of the mobility impairment in the shoulder-neck area ($p=0,037$), the subjective assessment of effect by the investigating physician ($p=0,001$) and by the patient ($p=0,011$). Regardless of whether a current was present or not, the copper electrode was found to have a significantly more pronounced effect on the pressure sensitivity of the trigger points.

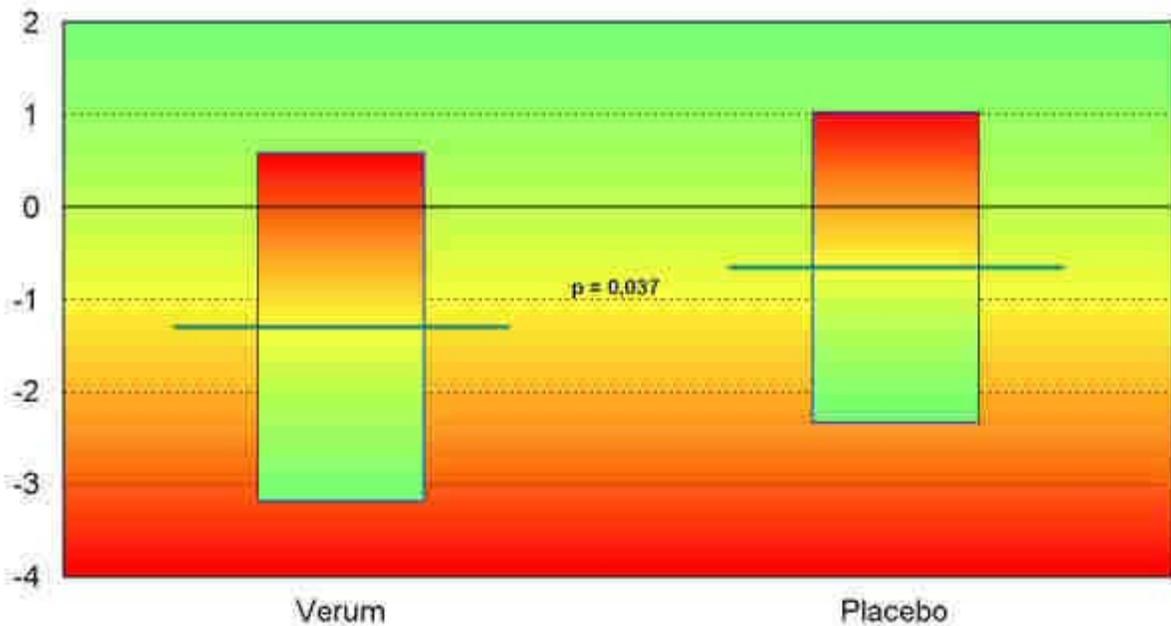
1. Change of pain from time before treatment and time after (on visual analog scale 0 to 10):

Placebo before - median: 5,240; Placebo after - median: 3,899; Placebo difference - median: -1,342
Verum before - median: 5,670; Verum after - median: 3,542; Verum difference - median: 2,128
p=0,036 (t-test) -> significant!



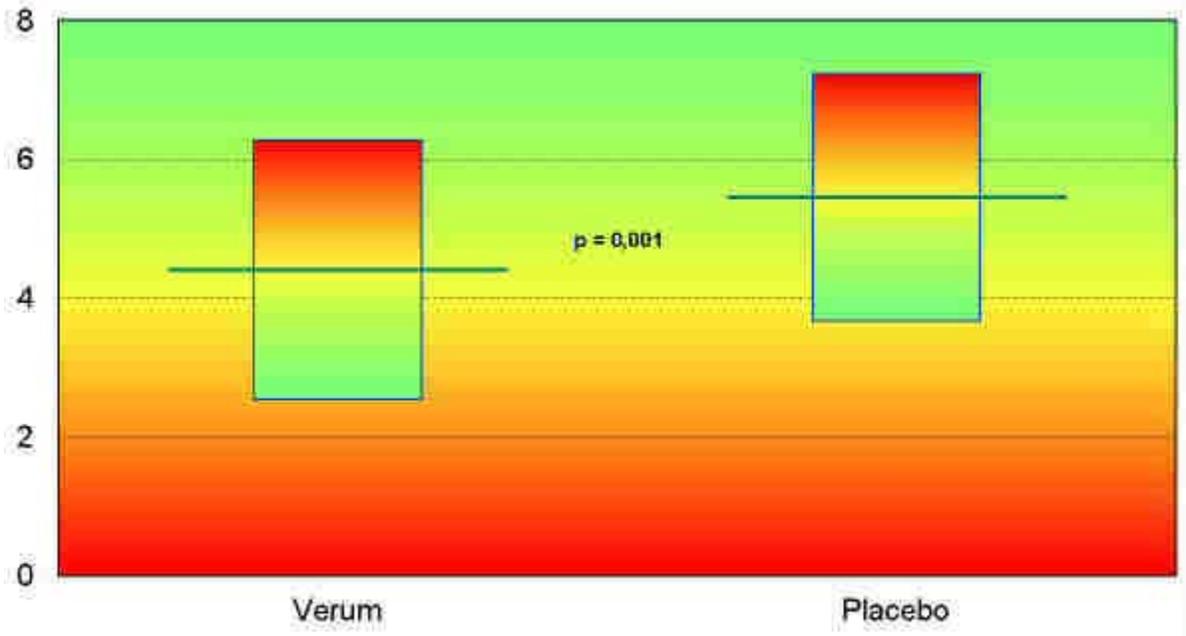
2. Make a better mobility of neck:

Placebo before - median: 4,866; Placebo after - median: 4,209; Placebo difference - median: - 0,657
Verum before - median: 4,971; Verum after - median: 3,667; Verum difference - median: - 1,304
p=0,037 (t-test) -> significant !



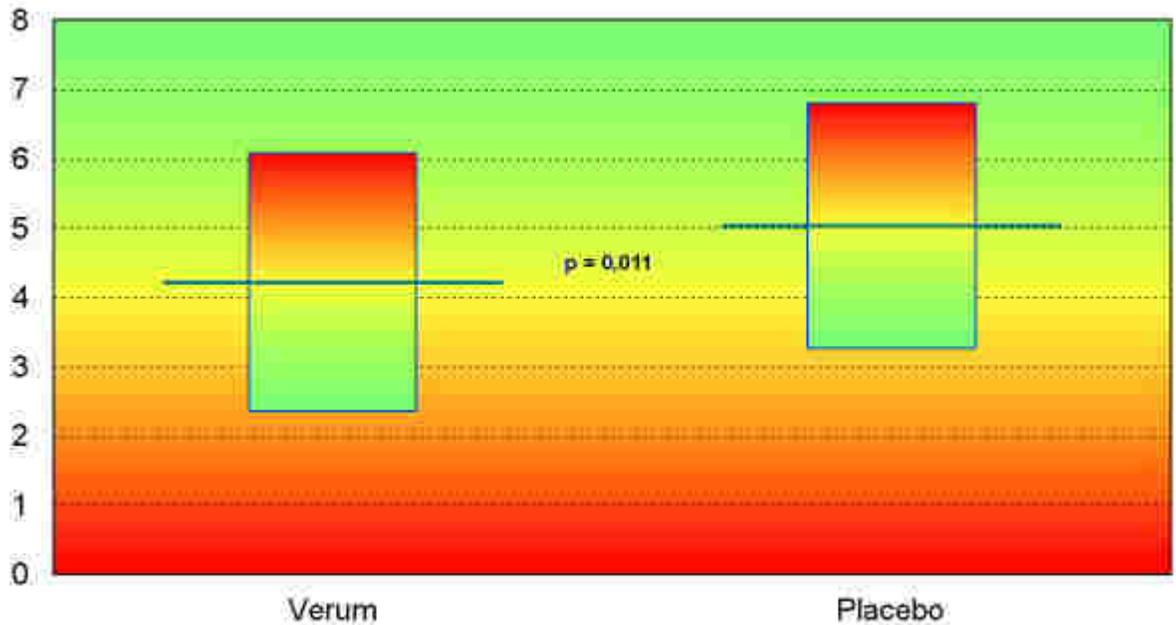
3. Effectiveness to doctors subjective estimation on scale from 1 (very good) to 7 (no effectiveness):

Placebo - median: 5,448
Verum - median: 4,406
 $p=0,001$ (t-test) -> very high significant !



4. Effectiveness to patients subjective estimation on scale from 1 (very good) to 7 (no effectiveness):

Placebo - median: 5,030
Verum - median: 4,217
 $p=0,011$ (t-test) -> high significant !



5. Meaning about the good practicability of this therapy:

Placebo: 92,5% !!!

Verum: 98,5%

Conclusions:

It was possible to demonstrate the effect of 10 μ A direct currents on painful muscle hardening for treatment periods of 48 hours. Further controlled studies should be carried out to demonstrate their effectiveness with other indications in orthopedics as well.