ct of Energy and Number of Sessions of Extracorporeal Shock Wav Therapy on Nerve Regeneration

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Introduction

shock wave therapy (ESWT) has been recognized
y effective treatment for neurological disorders.
romise, there remains significant debate regarding
ESWT protocols, particularly concerning energy
ge, and session frequency.
aims to explore the impact of energy density and
of ESWT on the regeneration of nerves in rats
sciatic nerve damage, seeking to identify the most
se and approach.

Method

ats were utilized and randomly allocated into five
experimental groups and control (each n=5).
ental groups underwent treatments with varying
ties (low-energy, 0.098 mJ/mm2 and high-energy,
n2) of ESWT, administered either in a single or
ion(1 week interval) after sciatic nerve injury
098 mJ/mm2, 400 pulses, single session)
098 mJ/mm2, 400 pulses, 3 sessions)
229 mJ/mm2, 400 pulses, single session)
229 mJ/mm2, 400 pulses, 3 sessions)
up (sciatic nerve injury, no treatment)
he influence of ESWT on nerve repair, ELISA,
escence staining, toluidine blue staining were used
weeks after nerve injury
valuated the recovery of nerve damage through
alyzing the expression levels of NGF, BDNF, S100β,
and NF200.
valuations were conducted via sequential sciatic
dex (SFI) measurements and electrophysiological
or a duration of 9 weeks.

Results

NF exhibited increased expression levels, especially
and IV, in comparison to the control group across

Results

- When comparing the experimental groups t
groups III and IV demonstrated higher expres
S100β, GAP43, NF200, BDNF, and NGF compare
and II.
- Immunofluorescence images, and toluidine blue's
is average area and myelin thickness show
significantly successful nerve regeneration results(
- The SFI and compound muscle action poten
indicated significant improvement in group Ⅲ &
the results of group Ⅰ & Ⅱ.

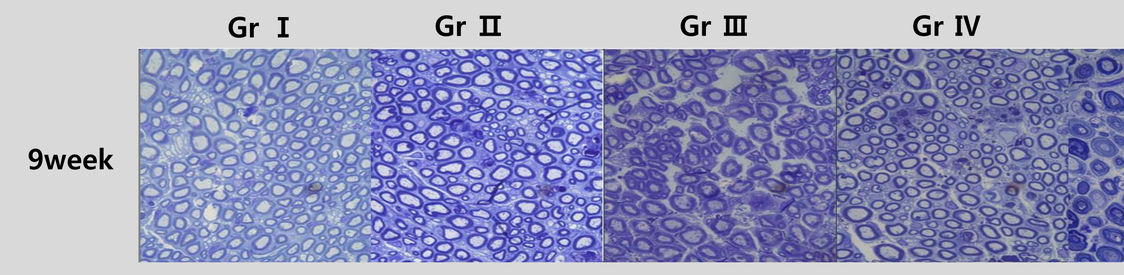

Figure 1. Effects of Extracorporeal shock wave therapy on axonal regenera
remyelination by toluidine blue imaging(nine weeks post nerve injury)

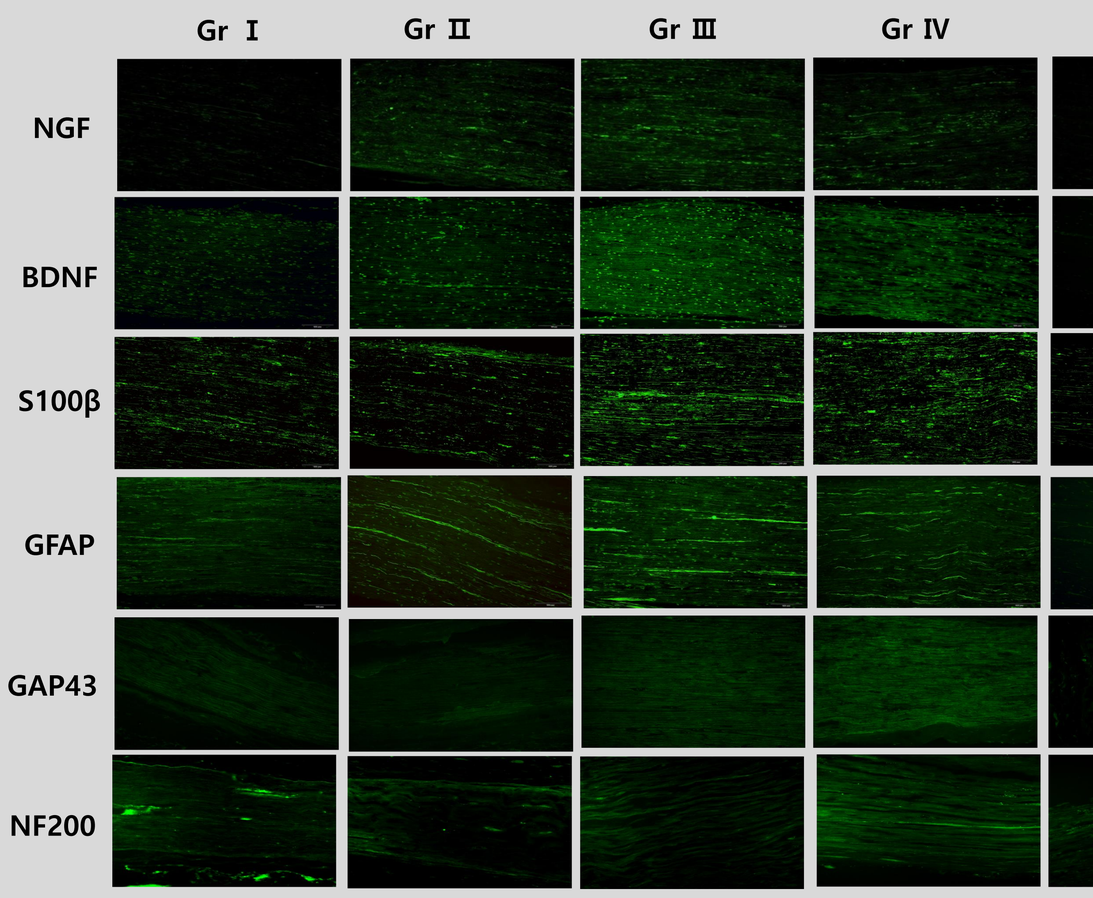

Figure 2. Effects of Extracorporeal shock wave therapy on NGF, BDNF, S10
GAP43, and NF200 expression of injured sciatic nerve by Immunofluoresce
image (nine weeks post nerve injury)

Conclusions

- This research established that Extracorporeal
Therapy (ESWT) facilitates the recovery of damage
high-energy treatments across any number of se
to be more efficacious in addressing nerve injurie
- Further investigations are imperative to ascertain
impacts of ESWT on nerve regeneration and to
the formulation of precise guidelines for its
clinical settings.

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