

Topical corticosteroid administration by pulsed radiofrequency energy

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Purpose

There is a need to administer corticosteroid hormones to pain sites other than by injection. A new electromagnetic device which delivers a pulsed, very long energy wave identical to radio waves has been developed. This study was done to determine if it can administer corticosteroids through the skin.

Method

The following patients had the common, acute ambulatory pain problems: lumbar back sprain (a); cervical-shoulder sprains (8), facial trauma (2), plantar fasciitis (3), knee sprain (2), amputation stump inflammation, (2). One of the following hormone preparations was applied to the painful area: prednisone 15mg or medroxyprogesterone 30 mg in one ounce of a soluble base cream. A pulsed radiofrequency energy device (Provant[®]) was applied over the painful area. Its electromagnetic energy is delivered through an 8 inch square pad which is pressed against the painful area covered with the hormone cream. The energy wave is preprogrammed to be pulsed at a frequency of 27.12MHZ over 30 minutes. During the 30 minutes, a hormone inspection was done every 10 minutes to determine if it had disappeared due to absorption through the skin.

Results

The topical hormone was absorbed and required replacement one or 2 times during every treatment. All patients reported pain reduction and more flexibility immediately following the treatment. These benefits remained for variable time frames until a second treatment was necessary or the acute painful injury resolved.

Conclusions

Radiofrequency energy is an electromagnetic energy wave that is known to reduce pain and edema and promote regeneration of injured, painful tissue. It appeared to be very effective in driving therapeutic hormones through the skin and into the injury site. The authors conclude that this technique offers a simple, practical way to drive hormones into a painful lesion, and further studies should be done to determine if radiofrequency and other energy waves are the preferred method to deliver hormones to peripheral pain sites.