

Effect of LPG endermology method on adverse skin reactions in long-term injection treatment

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Introduction

Glatiramer acetate (GA) is an immunomodulation medicine with an excellent safety profile intended for treatment of multiple sclerosis (RRMS and CIS). GA is applied daily in a form of subcutaneous injection containing 20mg of active agent. The most frequent adverse events (20%-60% of patients) include soreness, redness, induration that usually subside within several hours or days. Another adverse event in injection sites may include panniculitis with subsequent development of lipoatrophy (decrease in subcutaneous fatty tissue). This adverse event is common with other medicines applied subcutaneously such as insulin, corticosteroids, or antihistamines. According to experts, cold (temperature of the applied medicine) and overloading of injection sites have significant effect on development of lipoatrophy upon injection treatment. Unfortunately, lipoatrophy is the final or residual phase of panniculitis. Although lipoatrophy is not considered a serious adverse event, it is a cause of considerable concerns and frequent cause for change of therapy due to the impossibility to continue applying the medicine. The same applies to permanent subcutaneous induration in injection sites, which is also limiting continuation of the therapy, although clinically the treatment is effective.

Study objective

To evaluate the degree and scope of positive effect of LPG method in patients with lipoatrophy and extensive induration of subcutaneous tissues upon long-term injection therapy of GA.

LPG endermologie

Endermology is a patented method of cell stimulation done by mechanical transduction. It has been discovered by LPG company in 1986, it provides a 100% treatment of connective tissue for both aesthetic and therapeutic purposes (burns, scars, post-operation treatment, oedema, fibroses, etc.). Positive effect of this non-invasive and painless method includes enhanced tissue oxidation, which results in improved tone of the skin and adjacent tissues. Further it is activation of fibroblasts, which results in improved growth of longitudinal collagen and elastin and acceleration of lipolysis process. This method combines the effect of roller massage and dosed vacuum. Working head of the instrument with two absolutely independently powered rollers produces a „vacuum wave” (see figure) that moves forward, backwards, sidelong or diagonally using the self-powered head. The procedure is supported by permanent or impulse aspiration depending on program selected.

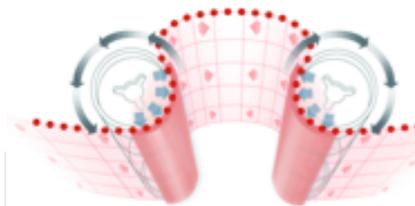


Before treatment

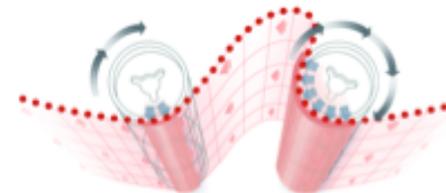


After 16 treatments

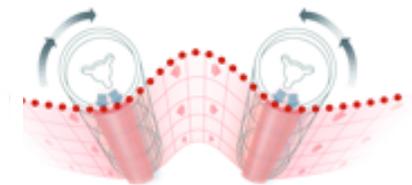
Direction of rollers - rollers may rotate in concurrent or opposite direction (forwards, backwards, inside and out)



Roll in



Roll up



Roll out



Study design

6 patients were selected – women treated by GA in a form of subcutaneous injection once a day. Criteria: patients with visible development of panniculitis in a form of lipoatrophy or in combination with significant induration in injection sites substantially limiting the application of the medicine. The patients had to meet the indication criteria for treatment with LPG method. The study included 16 treatments using the professional Cellu M6 machine. The treatment was performed twice a week for 30 – 45 minutes. The patients' damaged injection areas were treated (individual localisations – buttocks, thighs, arms or belly). The study further included processing of questionnaires and photo documentation for all patients (examinations 0-8-16 treatments).

Result:

5 patients completed the study; 1 patient failed to complete it due to acute viral disease, which is a contraindication of LPG treatment.

As soon as after eight treatments, the patients observed positive changes such as reduction and/or diminishing of indurations; the drug application was subsequently easier and less uncomfortable. After completion of the cure (16 treatments) the improvement was so significant that the patients were able to apply injections again into the sites, which they had to exclude before. Areas with lipoatrophy diminished; also, the palpation examination proved reduction or complete elimination of indurations. Application of the drug is easier, less uncomfortable and no new adverse skin reactions of this type develop any longer. Both skin and subcutaneous tissue in the treated areas became reinforced and their general condition improved. All of the 5 patients were maximally satisfied with the result. 3 of them will continue the maintenance cure – LPG treatment once a week for 2 months.

Conclusion:

Effect of LPG endermologie method on adverse skin reactions in long-term injection glatiramer acetate treatment is clearly positive. Regular LPG treatment in combination with prevention of adverse reactions in injection site clearly helps eliminate or reduce permanent induration of subcutaneous tissues due to long-term injection treatment. For efficiency of this treatment in our patients it is necessary to prevent risks of development of adverse skin reactions such as rotation of all puncture sites, exclusion of cold (room temperature of the medicine and elimination of cooling before or after injection). To prevent and manage lipoatrophy and indurations, it is necessary to educate patients on proper application technique, check regularly the injection sites as well and the application technique, and provide for skin care. LPG endermologie can help patients solve this problem, thus enabling them to continue the immunomodulation therapy of their disease.

Before treatment

After 16 treatments



Table 1. Perceived effect of the treatment

(average evaluation from 5 patients having duly completed the study)

Difficulty of application before commencement of LPG study (0-10 scale, where 0 = very easy application, 10 = very difficult)	Difficulty of application after 16 treatments
6,2	1,2
Soreness during treatment with LPG instrument at the beginning of the study	Soreness during treatment with LPG instrument upon the last treatments
2,66	1,2
Puncture pain	Puncture pain
5,6	3,6

Table 2. Application before the study chybí překlad!!!

Number of patients

Procedure	Yes	No
Cooling before puncture	0	5
Cooling after puncture	3	2
Using all puncture sites	3	2
Application using Autoject	4	1

Before treatment

After 16 treatments

