



## Post-Herpetic Pain Managed According to The Recommendations of the Italian Society of Mesotherapy

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### Abstract

Drugs injected intradermally spread slowly into the underlying tissues and produce a drug-saving effect. The Italian society of mesotherapy suggested that intradermal therapy obtains analgesic effect on localized pain, with a lower risk of systemic drug interactions. We report a case of post-herpetic pain successfully treated by this technique. This case confirms that the intradermal administration technique (mesotherapy), which is based on the pathophysiology of the disorder, according to the recommendations, can contribute to the management of patients who do not tolerate standard therapies.

### Keywords

Post-Herpetic Pain, Mesotherapy, Intradermal Therapy, Italian Society of Mesotherapy

### Introduction

Herpes zoster, or shingles, is sometimes associated with acute pain, postherpetic neuralgia, and other complications [1,2]. Postherpetic neuralgia is one of the most common complications of herpes zoster, and presents with dermatomal distribution pain lasting

more than 90 days, after the herpetic rash. Pain often occurs in the form of "burning", "electric shock" and allodynia or hyperalgesia [3]. Pain significantly compromises the quality of life and requires prolonged drug therapy [4,5]. Postherpetic pain can be managed with gabapentin, pregabalin, tricyclic antidepressants,

Case Report

or opiates, but adverse events may occur frequently [6-8). Systemic drugs use is limited by the patient's age, illnesses, and coexisting treatment. Mesotherapy is a technique by which a small quantity of drug is administered in the superficial layer of the skin, through several micro-injections. The injected drug spreads slowly into the underlying tissues and generates analgesia, equivalent to systemic treatment [9,10]. Indeed, it has been hypothesized that intradermal administration allows the drug to interact with dermal structures capable of modulating some forms of pain [11]. This technique is useful in many localized painful conditions, particularly when systemic drugs are not tolerated, or the risk of drug-drug interactions is high [12]. We report a clinical case in order to underline the usefulness of the applied intradermal therapy according to the recommendations of the Italian mesotherapy society.

Case Report

A 68 years old female, affected by chronic renal insufficiency, aortic and mitral insufficiency, and rheumatoid arthritis, assumed prednisone and methotrexate. She developed Herpes Zoster disease, all along the right T5 dermatome. The Zoster was

managed with Famciclovir (1500 mg/day for ten days). One month later, the skin eruption was resolving, but the ongoing pain persisted and about 20 severe painful attacks occurred every day.

When the patient arrives at our service, she reported past severe drowsiness using pregabalin, duloxetine, and Venlafaxine, so all these drugs had been discontinued. At the time she was assuming tapentadol 100 mg/day, reporting nausea and drowsiness, so we switched to fentanyl patch 12,5 mcg/h, started micronized palmitoylethanolamide (PEA) every 12 hours, and performed a Scrambler Therapy cycle. Scrambler Therapy is an electro-analgesia used on neuropathic pain [13,14]; it was applied 45-minutes daily, for ten consecutive days. After two weeks, ongoing pain became light, but we did not obtain any improvement in the number and intensity of painful attacks. The skin healed, so we started the Lidocaine patch (700 mg 12 hours, every day) and continued fentanyl and PEA. Two weeks later, daily painful attacks decreased to 10 and pain was getting better.

Unfortunately, severe nausea raised again and fentanyl was discontinued. Moreover, the Lidocaine

**Table-1: The table shows situation before intradermal therapy, for every therapeutic step. Pain intensity was assessed using 0-10 Numeric Rating Scale (NRS). Neuropathic Pain was assessed using DN4 questionnaire. Pain at its worst, least and average in the last 24 hours, was assessed using the Brief Pain Inventory short form (BPI-sf)**

	Worst Pain (NRS)	Least Pain (NRS)	Average Pain (NRS)	Painful Crises (NRS)	Painful Crises (Number per day)	Itch (NRS)	DN4 Score	Events
Baseline: Tapendadol 100mg/day	10	3	6	10	20	2	6	Nausea, Drowsiness. Drug discontinued
Fentanyl patch 12,5mcg/h, Palmitoiletanol amide, Scrambler Therapy	9	1	3	9	20	2	4	Nausea
Plus Lidocaine patch	9	0	2	9	10	4	4	Itch, Nausea. All drugs discontinued
After all drugs discontinued	9	3	6	9	20	2	6	

Case Report

patch caused skin irritation, after three weeks of application. All drugs were discontinued, and pain rose immediately to the previous level. Itch became a dominant symptom. Pain levels and adverse events for every step are reported in **Table-1**.

Since the patient showed intolerance to anticonvulsants, antidepressants, opioids, and lidocaine patches, we decided to apply local intradermal therapy (**Fig-1**). This term refers to a series of dermal micro deposits of the drug, which results in its slow diffusion into the underlying tissues [11,12]. We implemented the first session of mesotherapy with lidocaine 10 mg/ml solution. Every session we injected about 25 mg of lidocaine, by a

needle (27G, 4 mm) inclined 30° with respect to the skin surface. For each micro-puncture, a minimal amount of medication was injected (0,1-0,2 ml) to produce a small wheal, which raised slightly the surface layer of the skin. To provide a better comfort to the patients we did not inject in the painful area, but all along the superior and inferior border of the interested dermatome. Every point of injection was about 3 cm far from the previous. The patients reported moderate but bearable pain, during the needle insertion. After a week, the patient reported significant improvement, increasing in the following weeks. Only itch worse. After a week from the last session and after a month of follow up the number of pain attacks did not increase (**Table-2**).

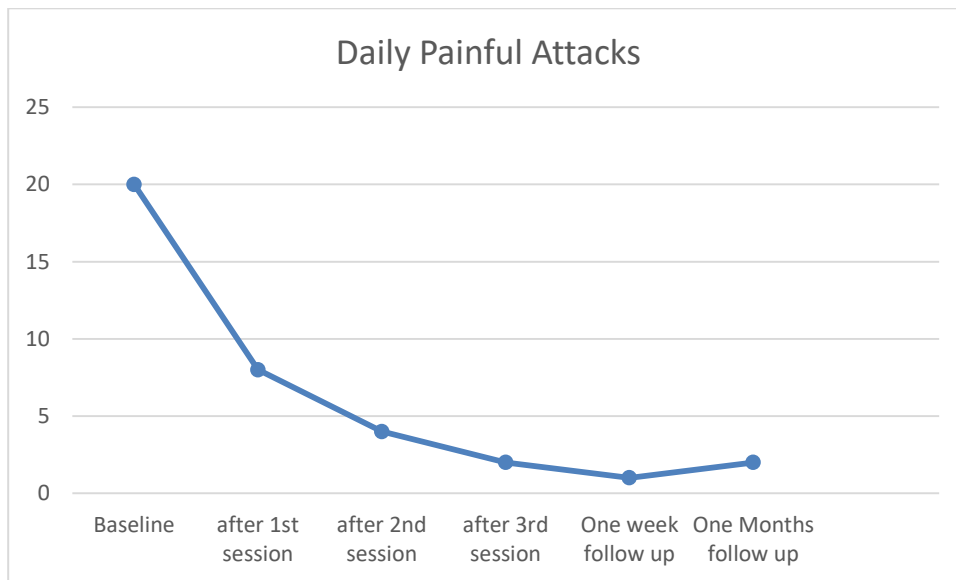


Fig-1: The figure shows the trend of painful crises during and after intradermal therapy

	Worst Pain (NRS)	Least Pain (NRS)	Average Pain (NRS)	Painful Crises (NRS)	Painful Crises (Number per day)	Itch (NRS)	DN4 score
BASELINE	9	3	7	9	20	2	6
After 1st session	9	0	6	9	8	7	
After 2nd session	7	0	4	7	4	7	
After 3rd session	7	0	4	7	2	7	
7 days follow up	6	0	4	6	01-Feb	7	2
30 days follow up	8	0	2	8	2	7	2

Case Report

**Discussion**

Despite the lack of data in this indication [15], the reported case suggests that post-herpetic neuralgia could be managed with mesotherapy. Our patient suspended all systemic drugs for adverse events. The lidocaine-based patch is a good option to reduce post-herpetic pain; however, local adverse reactions may limit its application. In this critical condition, we decided to apply lidocaine by intradermal route (mesotherapy technique). A significant reduction in the number of painful attacks was recorded, with considerable patient satisfaction. Mesotherapy has produced better results in terms of efficacy and tolerability than the patch. This result was maintained one month after the last session. In contrast, when we suspended the lidocaine patch, the patient had an immediate exacerbation of pain. The greater diffusion in the tissues underlying the site of inoculation could in part explain this difference, but mesotherapy could act not only pharmacologically: the skin could play an active role as well the reflexological effect due to the needle insertion [16].

In favor of this hypothesis, data have recently been recorded in favor of intradermal treatment both with respect to the oral route [17] and to the intravenous route [18]. It would be interesting to compare lidocaine patch versus lidocaine mesotherapy in a

randomized controlled trial.

**Conclusion**

Waiting for wider clinical studies, we recommend applying mesotherapy according to the rules of good clinical practice (Table-3) constantly updated by the Italian mesotherapy society [20]. We strongly recommend involving the patient in the therapeutic strategy through valid informed consent [21]. We strongly emphasize that patient satisfaction is a crucial element in pain therapy. Mesotherapy allows exploiting a further weapon useful in some forms of localized pain. The role played by local intradermal micro-injection (mesotherapy) should be better evaluated in clinical research. Even the health Authorities could suggest the application of this technique for its drug sparing effect.

**Contribution**

DR treated and described the case, MM and DR wrote the article, all the other authors reviewed and approved the case according with the Italian mesotherapy’s recommendation before submitting it.

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<b>Table-3: The table contains basic recommendations for correct execution of intradermal therapy from the Italian society of mesotherapy (11, 12, 19)</b>
Consider the clinical diagnosis before applying the technique
Compare all therapies available
Evaluate the most favorable treatment path for the individual patient
Inform the patient about the chosen treatment path
Inform the patient about the use of drugs
(indications, route of administration, risk / benefit ratio, in particular if they are therapies with little scientific data to support)
Perform the mesotherapy technique in a suitable environment
Comply with hygiene / asepsis rules
Do not mix more drugs in the same syringe if there is no solid scientific documentation
Check the patient for at least 15 minutes after the mesotherapy session
Report in the folder any clinical data relating to the treatment carried out and its results
Follow a treatment algorithm based on the patient's response and preferences
Schedule periodic follow-ups to verify the response to the applied care pathway

## Conflicts of Interest

All authors have read and approved the final version of the manuscript. The authors have no conflicts of interest to declare.

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