

Should the General Practitioner Consider Mesotherapy (Intradermal Therapy) to Manage Localized Pain?

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ABSTRACT

Wide variations in the types of pain and response to analgesic pharmacotherapy mean that a variety of treatment strategies are needed. One approach is mesotherapy (intradermal therapy). This consists of microinjections into the skin and is ideally suited to the management of localized pain. Advantages include increasing the duration of drug activity, reduced risk of adverse events and interactions, and possible synergy with other therapies. Mesotherapy provides general practitioners with another tool for the treatment of local pain. However, it is important to provide patients with full details of the pros and cons of this approach and obtain informed patient consent.

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COMMENTARY

There is heterogeneity between different types of pain due to different pathophysiological mechanisms and response to analgesics [1, 2]. General practitioners (GPs) often detect persistent localized pain in patients with several coexisting disorders and who are at high risk of adverse events. In these circumstances, or when the use of pain medication is contraindicated or cannot be prescribed for long periods due to safety reasons, the GP needs alternative therapeutic strategies to control pain.

Mesotherapy (intradermal therapy) can be included as an additional treatment approach for the management of localized pain. It consists of a series of micro-injections in the upper layers of the skin. This allows a slow diffusion of the drug compared with deep-administration [3]. The micro-injections are performed using a syringe with a 4-mm (27 gauge) needle or 13-mm (30 or 32 gauge)

needle, usually inserted at an angle of about 30°–45° with respect to the skin's surface. This technique has several advantages, including modulation of drug kinetics with prolonged local pharmacological activity, drug-sparing effects, a reduction in the risk of systemic interaction, and potential synergy with other therapies [3]. Mesotherapy is applied for some types of localized musculoskeletal pain and clinical benefits have been shown with lower doses of nonsteroidal anti-inflammatory drug (NSAIDs), muscle relaxants, anesthetics, and other analgesics. In fact, in a recent review [4] it was observed that a series of open studies involving a total of 2422 patients with various types of pain (cervical pain, back pain, tendinitis) highlighted a reduction in pain of at least 50% from baseline. In addition to the reduction of post-traumatic pain (778 professional athletes observed), a rapid functional recovery was achieved after a mesotherapy treatment.

The intradermal route of drug administration has become an alternative to the intramuscular route and is also being used for the administration of vaccines due to a greater immune response having been obtained with a lower dose of antigen compared to the intramuscular administration [5]. To practice this technique the following are required: clinical and pharmacological skills; ability to select patients to be treated; and communication skills to obtain valid informed consent. [6]. Over the years, in many countries there has been a growing interest in mesotherapy, especially in the field of esthetic medicine, both to correct skin disorders and to prevent the aging of the skin. The strong appeal of cosmetic applications for mesotherapy has resulted in use by non-medical personnel with a variety of off-label medications. Lack of compliance with minimum aseptic requirements during cosmetic uses has

contributed to some adverse outcomes [7, 8]. Fortunately, recommendations for proper medical use of this technique have been suggested, particularly to manage patients with minor localized pain syndrome [3, 4, 9]. In our primary care setting, after querying a database containing 2503 patients treated in the last 10 years (mean age 58.52 + 12.13; age range 14–98; 58.01% female), we detected a significant percentage of patients with one or more contraindications for long-term systemic anti-inflammatory drug treatment. In addition, 33.04% of the study population (827 patients with an average age of 57 ± 1.52 years; 55.7% male) had reported one or more episodes of moderate or severe pain (of the hip, neck, back or knee) secondary to osteo-articular disease. Of those, 376 (45.5%) had a history of cardiovascular disease, heart failure, hypertension, renal impairment, diabetes mellitus, gastrointestinal disorders, or chronic obstructive pulmonary disease with asthma. A total of 14.63% of patients with recurrent episodes of localized pain (4.8% of the observed population) aged 75 years and over had a history of clinical and pharmacological conditions suggesting that local treatment with anti-inflammatory drugs would be more appropriate than systemic. Based on available data [4], we may assume that at least 50% of this subgroup of patients (elderly, under multiple treatments, and with more than one episode of recurrent pain) could benefit from a local treatment such as mesotherapy.

Although preliminary randomized controlled trials conducted to date reported clinical benefit in 332 patients with back pain, cervicobrachialgia, and calcifying tendinitis of the shoulder [10–14], we suggest more well-designed randomized controlled studies to better define the clinical role of mesotherapy should be performed.

Chronic musculoskeletal pain (including low back, osteoarthritic, post-traumatic, and neuropathic pain) results from a complex interaction of mechanical and biochemical factors. Frequently, many patients with this type of localized pain cannot be treated with long-term courses of NSAIDs due to safety reasons, and in these cases, opioids are suggested. However, these drugs should be used carefully to prevent iatrogenic risk [15]. A multimodal approach to pain may help to reduce a drug's toxicity by lowering the total dose of any single drug used to target different pain mechanisms. Under this point of view, unmanageable localized pain could benefit from a localized treatment that takes advantage of the principles of mesotherapy and may contribute to the reduction of the systemic administration of medications.

CONCLUSION

In conclusion, GPs should consider local analgesic strategies whenever systemic treatment increases the risk of drug reactions or interactions. In this setting, mesotherapy may be a useful ally against unnecessary pain. However, it should be underlined that any analgesic technique has strengths and weaknesses. Therefore, the patient should be involved in pain management and informed about potential risks and failures. For this reason, informed consent is both good clinical practice and helps the patient to fully understand the limits and benefits of the therapeutic strategy proposed [6].

Selecting patients and establishing a treatment plan that takes advantage of the drug-sparing effect of mesotherapy, alone or in combination with other treatments, means the patient may achieve therapeutic success. Of

course nothing is fixed, and the doctor has a duty to consider carefully whether mesotherapy is or is not appropriate in every individual case.

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