

# How and when to use Mi-Gel®

## What is Mi-Gel®?

Mi-Gel® is intended for use as a topical agent for women suffering vulval pain.

Mi-Gel® is a yet unregistered, but patented (Australian patent # 2017259104 and Trademark # 1376821) formulation. It combines amitriptyline and estriol in a PLO organogel and is currently prepared on a patient by patient basis by compounding pharmacies. As a compounded formulation, Mi-Gel® is not registered with the Therapeutic Goods Administration (TGA).

Amitriptyline has multiple modes of action and is widely known for its anti-cholinergic activity. This makes it a first-line medication for the treatment of visceral pain. As a topical medication it has a membrane stabilizing effect, acting as a weak local anesthetic. This latter effect makes amitriptyline an ideal compound for application to a painful area. Topical amitriptyline by itself has been used for the treatment of vulvodynia for many years (Pagano & Wong 2012).

Estriol is one of three main human estrogens. Estrone (E1) and estradiol (E2) have been studied more extensively than estriol (E3) because estriol is only present in significant quantity during pregnancy, which ethically limits the ability to study the molecule in detail. Estriol has minimal effect on the nuclear estrogen receptor and therefore does not effectively stimulate endometrial growth. However, estriol has been shown to be effective in stimulating vulval and vaginal mucosal maturation efficiently at a very low dose (Rueda et al 2017).

## Clinical indications for use of Mi-Gel®

### Vulvodynia, pudendal neuropathy, dyspareunia

Mi-Gel® can be useful in the treatment of vulval pain in young women with vulvodynia, pudendal neuralgia and menopausal women with atrophy-induced dyspareunia. Dyspareunia in young women can develop secondary to prolonged use of the oral contraceptive pill.

Clinical experience (Vancaillie et al 2018) has shown improvement in patients with neuropathic pain: post-partum pudendal neuropathy and post-surgical neuropathy. Post-surgical neuropathy is defined as pain persisting for more than three months after surgery. Common surgical procedures in this area include: episiotomy, vaginal prolapse repair with or without mesh, vaginal hysterectomy, vulvoplasty, Bartholin's cyst marsupialization or resection.

In rare cases, minor trauma such as laser hair removal can result in persistent pain.

## Contra-indications

### Dermatological Conditions

Patients presenting with dermatological conditions such as signs of lichen planus, lichen sclerosis or psoriasis should be treated as medically indicated. Mi-Gel® is not intended for treatment of dermatological conditions.

### Infections

Any infectious process should be resolved prior to initiating treatment with Mi-Gel®. Candida is the most common infectious condition of the vulva and vagina and Mi-Gel® may worsen the fungal infection in some menopausal women. If candidiasis occurs while using Mi-Gel® on a regular basis, instruct your patient to temporarily stop application of Mi-Gel® until resolution of the infection.

### Allergies

The use of Mi-Gel® in individuals with known sensitivity to amitriptyline or estriol should be undertaken with extra caution. Patch testing is recommended as a minimum.

### Dermatological Conditions

Any pathology observed during inspection and examination should be thoroughly investigated and treated prior to commencing Mi-Gel®.

## Side-effects

### Local

Temporary local irritation at the site of application is common and in most cases subsides within minutes of application. Women should be informed that there may be a mild stinging sensation for a minute or so in the first week of application. This usually subsides as the mucosa quality improves with approximately two weeks of daily application of Mi-Gel®.

If the local irritation persists beyond a few minutes, the gel should be washed off with plain water and Mi-Gel® should be discontinued. True allergic reactions to Mi-Gel® have not been reported. They are unlikely but are possible and the prescriber should be alert to any signs.

### Systemic

Typical mild side effects of amitriptyline, linked to its anti-cholinergic activity, such as dry mouth, drowsiness and slow voiding are rare with topical application.

## Adverse events

### Local

Women who are susceptible to fungal infections of the external genitalia will be exposed to a greater risk of recurrence when using Mi-Gel®. This is linked to the change in pH of the vaginal secretions in response to estrogen treatment.

### Systemic

A clinical audit of one gynaecology practice over two years of prescribing Mi-Gel® revealed one patient complained of de novo headaches and two patients reported mild drowsiness after application. All symptoms ceased immediately after treatment was withdrawn.

# How and when to use Mi-Gel®

## How to prescribe Mi-Gel®

Mi-Gel® comes in a dose-pump vial. Each full depression of the plunger delivers 0.5mL of gel, a standard daily dose. Current regulations allow compounding medications to be dispensed for a period of one month, unless stability studies have been performed. These studies are underway for Mi-Gel®

Patients should be informed that the improvement in symptoms is gradual and the optimal effect is usually reached after several weeks of treatment. It is recommended that patients use Mi-Gel® daily for a minimum of 2-3 weeks before deciding if it is of benefit to their pain.

## Mild vulvo-vaginal pain

Script should read;

**Mi-Gel – compounded amitriptyline 5mg/g(0.5%) + estriol 0.3mg/g(0.03%). 15mL**

Apply **0.5mL daily** to the entry of the vagina or the painful vulval area with a clean finger.

### Indications

- Mild vulval pain due to atrophy (menopause, prolonged use of the oral contraceptive pill, post-cancer treatment).
- Hyperaesthesia of the vulva

## Moderate – severe vulvovaginal pain

Script should read;

**Mi-Gel – compounded amitriptyline 5mg/g(0.5%) + estriol 0.3mg/g(0.03%). 30mL**

Apply **0.5mL twice daily** to the entry of the vagina or the painful vulval area with a clean finger.

### Indications

- Pudendal neuralgia
- Post-surgical neuropathy (painful episiotomy scar, vaginal surgery, surgery with or without transvaginal mesh)
- Allodynia of the vulva (vulvodinia)

## Severe allodynia

Script should read;

**Mi-Gel – compounded amitriptyline 5mg/g(0.5%) + estriol 0.3mg/g(0.03%). 40mL**

Apply **0.5mL two to three times daily** as close to the painful vulval area as possible with a clean finger.

### Indications

- Severe allodynia or hyperaesthesia to light touch that prevents direct topical application due to the sensitivity of the vulval skin (vulvodinia)
- Pain due to mesh erosion into the vagina

## Monthly review

With daily application the allodynic area should reduce in size. After one to three months, the patient can apply gel directly to the affected area. Once the symptoms settle, the dose can be adjusted accordingly.

Treatment with Mi-Gel® can be continued if pain levels have improved but not resolved. The dose may be reduced to each second day, or three times per week to maintain benefit.

In the case of resolution of symptoms, it is recommended to maintain treatment for another three weeks prior to cessation of application. If the patient experiences a recurrence of symptoms (in the absence of any de novo pathology) treatment can be resumed as soon as possible.

Mi-Gel® is currently available from the following pharmacies

- **MyCompounder** (Boronia, VIC)
- **Stenlake Compounding Chemist** (Bondi Junction, NSW)
- **Ainslie Pharmacy** (Ainslie, ACT)
- **McKenzies Chemist** (Mt Lawley, WA)
- **Formulae Albion** (Albion, QLD)  
formerly *The Compounding Lab*
- **Green Dispensary Compounding** (St Peters, SA)
- **CompoundLabs** (Auckland, NZ)

## References

- Pagano, R., & Wong, S. (2012). Use of amitriptyline cream in the management of entry dyspareunia due to provoked vestibulodynia. *Journal of lower genital tract disease*, 16(4), 394-397.
- Rueda, C., Osorio, A. M., Avellaneda, A. C., Pinzón, C. E., & Restrepo, O. I. (2017). The efficacy and safety of estriol to treat vulvovaginal atrophy in postmenopausal women: a systematic literature review. *Climacteric*, 20(4), 321-330.
- Vancailie, T., Tan Y., Chow, J., Kite, L. & Howard L. (2018) Pain after vaginal prolapse repair surgery with mesh is a post-surgical neuropathy which needs to be treated – and can possibly be prevented in some cases. *Aust NZ J Obstet Gynaecol*, 58, 696-700.

**TA Pharma**

tapharma.com.au

Disclaimer: TA Pharma provides information on its products only. TA Pharma does not intend to interfere in any way with provision of care.