



Question: Can lidocaine 5% plasters be worn continuously?

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Summary

Versatis® (Lidocaine 5%) plasters are licensed for application for up to 12 hours within a 24-hour period.¹ Despite this, studies and anecdotal evidence indicate that lidocaine plasters 5% may be;

- worn for up to 18 hours within a 24 hour period² or
- worn for up to 24 hours³ (a patch applied once daily) or
- changed every 12 hours³ (a patch applied twice daily)

with good pain relief observed during this time. The recommendation that each plaster should only be worn for 12 hours is due to the risk of local adverse events (e.g. rash, pruritus, erythema) if used beyond this duration.³ However, similar incidence rates have been found in studies investigating 12-hour daily and 24-hour daily (back-to-back) plaster use.³ Applying a new plaster every 12 hours (i.e. twice daily) may result in higher plasma concentrations of lidocaine compared to the continuous application of a plaster for 24 hours.⁴ Plasma concentration of lidocaine measured weekly where, lidocaine 5% patches were applied for 18 hours per day for an 8 week period, did not significantly differ between weeks.² Reported levels remained well below those that typically produce antiarrhythmic effects or toxicity.² Nonetheless, if the plaster is to be used outside its licensed indication, the patient should be monitored for any adverse effects. The prescriber assumes full responsibility for the administration of a Lidocaine 5% plaster outside of its licensing (i.e. if prescribed for periods of longer than 12 hours per day).

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Information

There are three types of Lidocaine 5% plasters available on the worldwide market, Versatis® (Europe, Middle East and Latin America), Lidoderm® (USA and Canada) and Neurodol® (Switzerland).⁵ The manufacturer of Versatis® plasters advise that the differences between these products are negligible.⁵ Versatis® is a soft hydrogel plaster (10cm x 14cm) impregnated with 700mg (5mg/cm²) lidocaine in an aqueous adhesive base.¹ Versatis® plasters are licensed for the symptomatic relief of neuropathic pain associated with previous herpes zoster infection in adults.¹ Versatis exerts a local analgesic effect at the site of application with very low systemic concentrations of lidocaine.⁵ The mechanism by which this occurs is due to stabilisation of neuronal membranes, which is thought to cause down regulation of sodium channels resulting in pain reduction.¹ The painful area should be covered with the plaster once daily for up to 12 hours within a 24-hour period.¹ The plaster must be applied to intact, dry, non-irritated skin.¹ Not more than three plasters should be used at any one time.¹ Each plaster must be worn no longer than 12 hours. The subsequent plaster-free interval must be at least 12 hours.¹ Versatis® patches are not licensed for 24 hour use.¹

However, there is some evidence to support the use of lidocaine 5% plasters for periods beyond 12 hours.

- Gammaitoni et al published an open label, non-comparative study using four lidocaine plasters (Lidoderm®) applied for 18 hours per day for 3 consecutive days.⁶ Erythema was absent or negligible in 90% of subjects.⁶ Where present, erythema generally improved within 2-4 hours after plaster removal.⁶
- Another study by Gammaitoni et al investigated the use of four lidocaine 5% medicated plasters (Lidoderm®) applied for 72 hours continuously in a randomised, prospective, open label study.⁴ Group 1 plasters were changed every 24 hours (once daily) whereas group 2 plasters were changed every 12 hours (twice daily).⁴ The mean maximum plasma lidocaine concentrations at steady state was 186ng/ml in Group 1 and 225ng/ml in Group 2, this is compared with 130ng/ml in patients receiving the plaster for 12 hours per day.⁴
- Both Gammaitoni studies found that the use of lidocaine patches 5% for longer than the licensed interval of 12 hours per day may increase the risk of developing localised side-effects such as rash/erythema.^{4,6}

- Barbano et al carried out an open label study in patients with diabetic polyneuropathy.⁷ The study involved the use of up to four 5% lidocaine patches for 18 hours per day over a three week period.⁷ There was a significant improvement in pain from baseline to three weeks.⁷ Adverse events were minimal, and systemic accumulation of lidocaine did not occur.⁷
- Herrmann et al conducted an open label study in patients with idiopathic distal sensory polyneuropathy.² The study involved the use of up to four 5% lidocaine patches for 18 hours per day over a three week period, with a 5 week extension.² The mean plasma lidocaine levels did not differ significantly between weeks 1, 3 or 8 and reported levels remained well below those that typically produce antiarrhythmic effects or toxicity.² Significant improvements in pain and quality of life outcome measures were observed and the plasters were found to be well tolerated.² Non-serious treatment-related local adverse events were reported, including burning, pain and erythema.²
- In two studies performed by Nalamachu et al, patients applied up to three patches once every 24 hours.^{8,9} In both studies the plaster was well tolerated by the patients with carpal tunnel syndrome and they did not experience any systemic adverse reactions related to the treatment.^{8,9} However, the studies were not designed to specifically investigate the pharmacokinetics, safety, and tolerability of extended dosing.
- Lin et al conducted a randomized, double-blind, vehicle-controlled, parallel study involving patients suffering from moderate-severe pain caused by acute herpes zoster infection (within 4 weeks of onset).¹⁰ Lidocaine patch 5% (Lidopat®) or vehicle patch were applied to the intact portion of the painful skin area without blisters at 12-hour intervals twice a day for 2 consecutive days.¹⁰ The study found that lidocaine 5% plasters are a well-tolerated and effective modality to relieve moderate to severe pain associated with acute herpes zoster when applied twice a day.¹⁰

Although unlikely, the risk of toxicity due to increased plasma lidocaine concentrations cannot be excluded when the plaster is used outside of the licensed indication.⁵ It would be prudent to increase the interval slowly, perhaps leaving the patch on for 16 hours, increasing as necessary up to 24 hours. Symptoms of systemic lidocaine toxicity include

dizziness, vomiting, drowsiness, seizures, mydriasis, bradycardia, arrhythmia, and shock.¹

References

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