

## CASE AND RESEARCH LETTERS

### [Translated article] Transdermal Fentanyl in Acute Skin Failure: Risks That Should be Closely Monitored at the Dermatology Emergency Room



#### Administración transdérmica de fentanilo ante fracaso cutáneo agudo: riesgos a considerar en Urgencias de Dermatología

To the Editor,

Fentanyl is an opioid-type analgesic used via transdermal administration—patches—for the management of severe chronic pain. Fentanyl is marketed in Spain under various brand names, including generics, and in different dosages.

Administration errors, accidental contact of the patch with another person, or patient comorbidities that increase susceptibility to adverse effects can enhance its toxicity, potentially leading to fatal outcomes.

There is insufficient warning in the medical literature regarding the dangers of transdermal use in patients with compromised skin barriers. Below, a case of fentanyl intoxication is described in a woman with a flare-up of generalized pustular psoriasis.

A 94-year-old woman with a past medical history of hypertension, dyslipidemia, heart failure, atrial fibrillation, and psoriasis with psoriatic arthropathy, previously treated with acitretin and analgesics, presented to the ER due to a progressive worsening of her psoriasis, along with a decreased level of consciousness, weakness, weight gain, and dyspnea.

The patient had > 50% of her skin surface covered by erythematous-squamous plaques, some areas showing epidermal detachment along with pustular lakes (fig. 1). No mucosal involvement was noted. Heart failure decompensation was confirmed (evidenced by increased Nt-proBNP, signs of vascular redistribution on chest X-ray, decreased oxygen saturation with abdominal retractions, lower limb edema, and weight gain). Based on these findings, the initial diag-



**Figure 1** Psoriasis showing as erythematous-squamous plaques on the trunk, with a few areas of epidermal detachment.

nosis was generalized pustular psoriasis with systemic signs of von Zumbusch type. Blood tests showed a slight decline in renal function without increased liver enzymes or other relevant abnormalities.

Additionally, the patient exhibited a low level of consciousness—Glasgow score of 6—not observed in previous days, and the neurological examination revealed unreactive miosis.

Upon a meticulous re-examination of the entire skin surface, a fentanyl patch was found in the upper dorsal region that the patient was using for the management of chronic pain from her joint disease, which explained the patient's symptoms.

Upon suspicion of opioid intoxication from transdermal administration in a situation of acute skin barrier failure, IV naloxone was administered, which instantly reversed the patient's neurological symptoms.

The diagnosis of pustular psoriasis was confirmed through a skin biopsy, and the patient showed rapid improvement after treatment with ixekizumab.

Despite the widespread use of fentanyl patches for chronic pain management, they are not without risk. Cases of opioid intoxication have been reported following accidental exposure in children and dosing errors in adults.<sup>1</sup> Additionally, intoxications have been documented after transdermal application in heat-related situations—both

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external heat and fever—which would increase the absorption rate due to increased dermal microcirculation.<sup>2</sup> A case where a patch was mistakenly applied as a simple dressing to a skin wound resulted in the death of a 2-year-old girl.<sup>3</sup> In chronic skin conditions, we found a case of fentanyl intoxication in a patient with atopic dermatitis, in whom the patch was applied by a relative to alleviate the pruritus and pain associated with an eczema flare, without understanding the potentially fatal consequences.<sup>4</sup>

The technical data sheet<sup>5</sup> warns, among other potential adverse effects, about prior opioid intolerance, respiratory depression, use of other central nervous system depressants, chronic obstructive pulmonary disease, drug dependence, and possibility of abuse, among others. It also mentions increased fentanyl absorption when applied under external heat conditions or fever. Although the data sheet advises against applying the patch to “irritated or irradiated skin,” there is no further warning in this regard.

Skin diseases usually compromise the skin barrier function, leading to increased permeability and a greater potential for drug absorption when administered via this route. In patients with chronic dermatoses, especially in cases of acute skin barrier failure, the transdermal administration of drugs should not be considered suitable. Overdose of certain therapeutic groups, such as opioids, can be fatal. We believe that a thorough examination of the entire skin surface of patients with acute skin barrier failure is particularly relevant to detect this potential risk early.

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## Conflicts of interest

None declared.

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P. García Piqueras<sup>a,b,\*</sup>, D. Vírveda González<sup>a</sup>,  
K. Soledad Encalada Luna<sup>c</sup>, E. Rodríguez Lomba<sup>a,b</sup>

<sup>a</sup> *Servicio de Dermatología, Hospital General Universitario Gregorio Marañón, Madrid, Spain*

<sup>b</sup> *Instituto de Investigación Sanitaria Gregorio Marañón, Madrid, Spain*

<sup>c</sup> *Servicio de Medicina Interna, Hospital General Universitario Gregorio Marañón, Madrid, Spain*

\* Corresponding author.

E-mail address: [palomagpiqueras@gmail.com](mailto:palomagpiqueras@gmail.com)

(P. García Piqueras).