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EDITORIAL

# Reducing the stress of corneal neuropathic pain: 'Pain without Stain'



*Eye* (2024) 38:411; https://doi.org/10.1038/s41433-023-02750-2

Neuropathic corneal pain (NCP) is a growing problem in ophthalmology, but its precise pathology and treatment are unclear. NCP is often associated with hyperalgesia, allodynia, photo-allodynia and spontaneous pain with a normal slit-lamp examination [1, 2].

Neuropathic pain is defined as pain arising as the direct consequence of a lesion or disease affecting the somatosensory system [1]. Clinically, it should be distinguished from nociceptive pain, where there is detectable pathology in the corneal tissue/ocular surface [1].

Several patients who suffer from NCP present with dry eye disease (DED) symptoms. It is frequent to see patients with presumed DED and severe ocular Pain but no clinical signs on slit-lamp examination. Such patients show no fluorescein corneal staining. These patients are referred to as having 'Pain without Stain' [3].

This group of patients with NCP suffer from poor quality of life (QoL), chronic fatigue, pain, and depression with an increased overall burden of symptoms [4]. According to a study conducted in the UK, such ocular surface diseases with DED are associated with a 30% reduction in workplace performance, productivity, and non-work activities [4].

In this issue, Leonardi et al. present their investigations on patients with NCP and attempt to characterise them into pathological entities of neuropathic pain. They divide NCP into subgroups based on ocular surface evaluations and neuropsychiatric tests. They found a positive correlation between pain severity, post-traumatic stress disorder, and depression in patients with NCP compared to nociceptive cases [5], i.e. cases where corneal pathology can be detected.

In addition to providing a classification approach and treatment recommendations, the authors offer helpful therapeutic insights. Some patients with NCP found relief from systemic therapy such as duloxetine or pregabalin. This is interesting, as there is a lack of consensus regarding the efficacy of systemic neurological treatment [2].

Leonardi et al. also investigated the use of in vivo confocal microscopy (IVCM) to detect corneal nerve morphology in patients with NCP, attempting to identify a newly described clinical feature of 'corneal neuromas' on IVCM [6]. The presence of these 'corneal neuromas' has been controversial. Some investigators suggest that these are diagnostic biomarkers and explain NCP [7]. However, these features have also been reported in healthy corneas [8], suggesting they are an inconsistent finding. Leonardi et al. similarly could not find a correlation between corneal neuromas and NCP [5].

This study reinforces the idea that treating patients with NCP whose mental health issues are as important as treating their eye defects. Perhaps then, we can provide relief to patients with 'Pain without Stain'.

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## COMPETING INTERESTS

The author has received sponsorship for educational events from Thea Pharmaceuticals & Santen and is a member of the *Eye* editorial board.

## ADDITIONAL INFORMATION

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Received: 12 September 2023 Accepted: 12 September 2023
Published online: 19 September 2023