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Utility Values in Peripheral Neuropathic Pain (PNP)

Rita Freitas, PharmD,[a] Charlotte Both, PhD,[a] Gerlinde Dahmen, PhD,[b] Cerian Reynish, MSc[c]

[a]Grünenthal GmbH, Aachen, Germany (or its affiliates), [b]Numerus AG, Reutlingen, Germany, [c]Numerus Ltd, Wokingham, United Kingdom

Objectives

There is limited evidence on quality of life utility values in patients with peripheral neuropathic pain (PNP). This analysis aimed at estimating health state utility values that capture the quality-of-life impact by pain severity level in patients with PNP who participated in high concentration capsaicin patch (HCCP) studies.

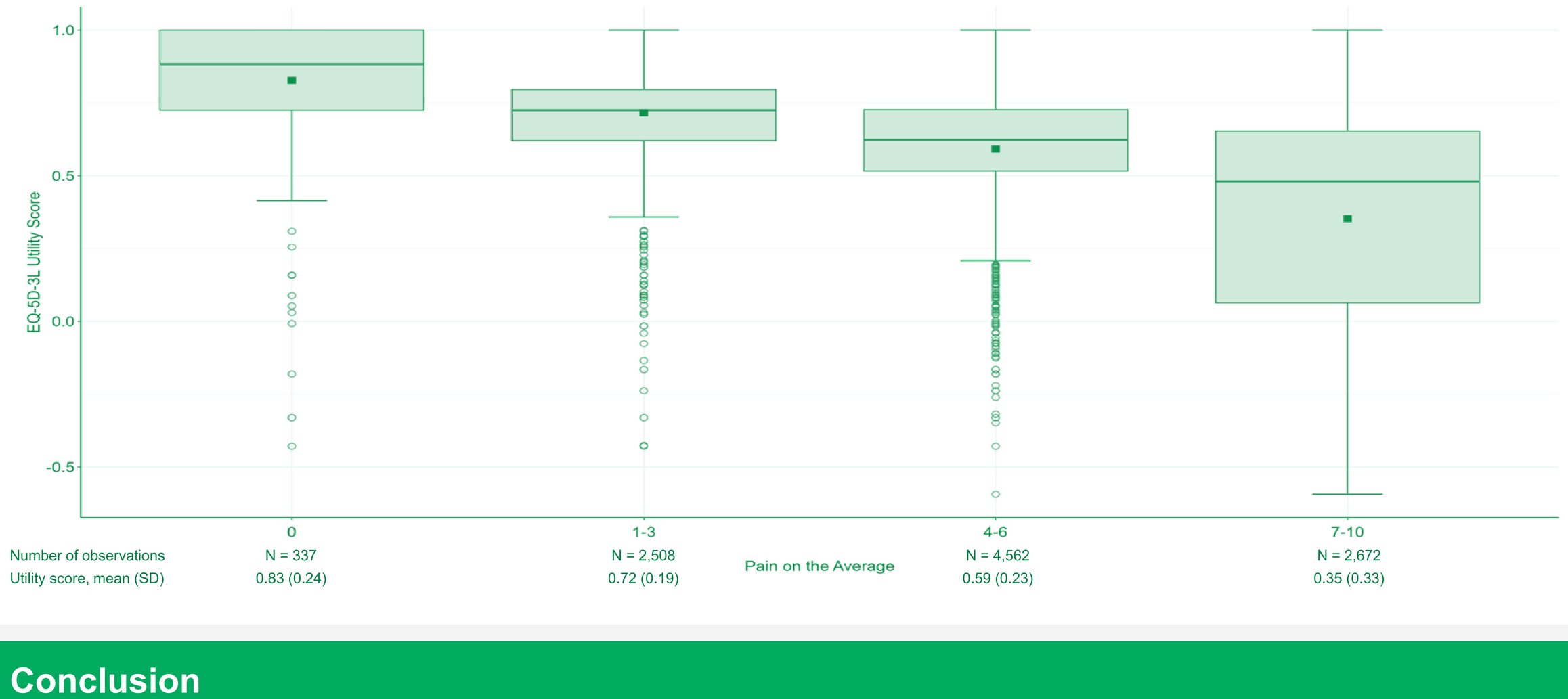
Methods

EQ-5D data were pooled from five studies in peripheral neuropathic pain (PNP): ASCEND,[1] PACE,[2] STEP,[3] STRIDE[4] (3-level) and ELEVATE[5] (5-level). Pain severity was measured using numerical rating scales (NRS) and categorized into four health states well established in pain literature: no pain (score = 0), mild (1-3), moderate (4-6), and severe (7-10). Utility scores were derived using the UK-specific value set by Dolan et al.[6] and the Hernandez-Alava method.[7] All pain scores between date of EQ-5D assessment and up to seven days before and after the EQ-5D measurement were included, regardless of treatment arm and assessment timing. Descriptive statistics were calculated for each pain category.

Results

A total of 10,079 observations from 2,114 participants were included in the pooled analysis. Mean (SD) EQ-5D utility scores by pain category were: No pain: 0.827 (0.238), Mild pain (1-3): 0.716 (0.188), Moderate pain (4-6): 0.591 (0.226), Severe pain (7-10): 0.353 (0.330). There is a clear trend of lower utility scores - representing worse health related quality of life - for more severe pain levels; this is also evident from the higher proportion of patients with negative utility values (i.e. who are in a health state they value as worse than death).

Figure 1: EQ-5D-3L UK utility score against categorised pain score



Conclusion

- This pooled analysis of clinical trials provides **robust utility estimates** that capture the **quality-of-life impact** of **different pain severities in PNP;**
- The clear separation in utility values across pain severity levels – with **lower utility in higher pain levels** – highlights the **substantial impact of even moderate pain on patient quality of life;**
- The use of absolute pain levels (as opposed to relative reductions) is a more patient-relevant measure by truly reflecting how patients feel in the moment, independently from their baseline pain levels;
- This analysis supports the **relevance** of **pain-defined health states,** and it is **recommended to use these values in future economic evaluations.**

[1]Mankowski, C., et al. BMC Neurol 2017; [2]Vinik, A., et al. BMC Neurol 2016; [3]Simpson et al. J Pain 2017; [4]Gálvez, R.; Clin J Pain 2017; [5]Haanpää, M. et al. European Journal of Pain 2016; [6]Dolan, P. et al. Med Care 1997; [7]Hernández Alava, M., et al. Pharmacoeconomics 2023

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