Measuring the Level and Impact of Neuropathic Pain by Disease Area in the EU

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Background
- The International Association for the Study of Pain introduced the term Neuropathic Pain (NP), defined as ‘pain initiated or caused by a primary lesion or dysfunction in the nervous system’. NP may arise as a consequence of a lesion or disease affecting the somatosensory system.1
- NP is a common disorder that can be chronic, severe and disabling. It is estimated to affect up to 7–8% of the general population in Europe.2,3
- Many treatments have been proposed for NP; however it remains frequently undertreated and underdiagnosed.4 Furthermore, the quality of NP treatment appears to be poor, with few patients receiving medications in efficacious doses.5
- NP seems to be more difficult to treat than many other types of chronic pain and patients with this condition have a greater medical co-morbidity burden than age and gender-adjusted controls.6

Objectives
- To investigate the level of pain and impact on the quality of life (QoL) of patients who experience NP as a consequence of a range of conditions.

Methods
- The data were extracted from the Adelphi Neuropathic Pain Disease Specific Programmeâ® (DSP), a cross-sectional survey of 121 primary care physicians (PCPs) and 292 specialists, and their NP patients, conducted in 2012 in France, Germany, Italy, Spain and the UK. Full details of methodology have been published previously.6
- The physician sample includes; PCPs, neurologists, and anaesthetists, pain clinic physicians, diabetologists, orthopaedic surgeons and rheumatologists. PCPs are required to see a minimum of 12 NP patients a month, and the specialists a minimum of 10.
- Participating physicians completed a comprehensive patient record form (PRF) for their next 8 consulting NP patients for PCPs and 10 for specialists; this selection method aims to eliminate selection bias.
- Patients were invited, on a voluntary basis, to fill out a self-completion questionnaire which included the short form of the Brief Pain Inventory (BPI)7 and the EuroQol-5D,8 both psychometrically validated and widely used Patient Reported Outcome (PRO) measures.
- Patient and physician level data could be directly matched through a unique identifier.
- Patients were segmented into those with peripheral (n=2033), central (n=301) or both peripheral and central (P&C) condition(s) (n=165) and by categorising patients across a range of peripheral and central conditions causing NP (a total of 40 pre-coded conditions, with an option to list others).9
- A final utility score was derived from the completion of the EQ-5D by each patient. For the BPI, the Pain Intensity dimension was the main output. This measures how much pain has interfered with seven daily activities (1 item each), including general activity, walking, work, mood, enjoyment of life, relations with others, and sleep. Two further items were extracted from the Pain Severity dimension: ‘worst pain in the last 12 hours’ and ‘average pain’. These isolated items have been used singly to represent pain severity in many clinical trials.10
- Physicians and patients provided de-identified data in accordance with Health Insurance Portability and Accountability Act (HIPAA) regulations and the European Pharmaceutical Market Research Association (EphMRA) code of conduct for international healthcare market research. Prior to analysis, responses were aggregated.

Statistical Methods:
- Descriptive Statistics to describe basic demographics of the sample, as well as the average BPI and EQ-5D levels of the sample and the segmented populations. Statistical differences in the pain and utility levels among the subpopulations were examined using t-tests.

Results
- 3956 patients were included in the survey, of whom 2499 (63%) completed both the EQ-5D and BPI.
- Demographics show that while NP can affect any segment of the population, almost 70% of NP cases range from 45 to 74 years of age (Figure 1a). Prevalence is slightly higher in females (Figure 1b) and this is consistent across countries.
- Some conditions were associated with greater pain, notably radiculopathy (BPI 4.7), fibromyalgia (BPI 5.1) and alcoholism (BPI 4.9) – all p<0.01 compared with population means (Figure 4).

Conclusions
- These data show a statistically significant inverse relationship between level of pain and the QoL experienced by patients using the EQ-5D and BPI.
- This was particularly evident among patients with peripheral and central pain and within NeP caused by radiculopathy, fibromyalgia and alcoholism. Better pain control would therefore lead to improvements in QoL.

Disclosures
- None of the authors has any conflicts of interest.
- All are full time employees of Adelphi Real World, Macclesfield, UK.

References


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