WHAT DOESN'T KILL YOU: RE-EVALUATING OUR APPROACH TO HIGH BURDEN, LOW MORTALITY DISEASE WITH A FOCUS ON MIGRAINE AND MULTIPLE SCLEROSIS

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INTRODUCTION

- Migraine is a chronic condition characterised by severe head pain, nausea, visual and auditory disturbances, and sensitivity to sensory inputs[1]
- Migraine affects an estimated 12% of the global population, with a prevalence of 11.4% in Europe, equal to 50.96 million individuals in the EU27[1,2,3]
- The cost of Migraine within the EU is estimated at between €18 billion and € 27 billion, mostly in lost work productivity[4,5,6]. Furthermore, it is also the leading cause of disability in under 50s and contributes the second greatest years lived with disability, after lower back pain[7,8]
- Multiple Sclerosis (MS) affects ~1 in 800 people, yielding an EU27 patient population of ~630,000[9]. However, the diseases have a very similar cost burden at €22.5 billion (€40,300 per patient)[9,10]
- MS was frequently referred to in primary research carried out by Cogentia as an example of a higher priority neurological disease compared to migraine, and so MS was selected as a comparator for our analysis

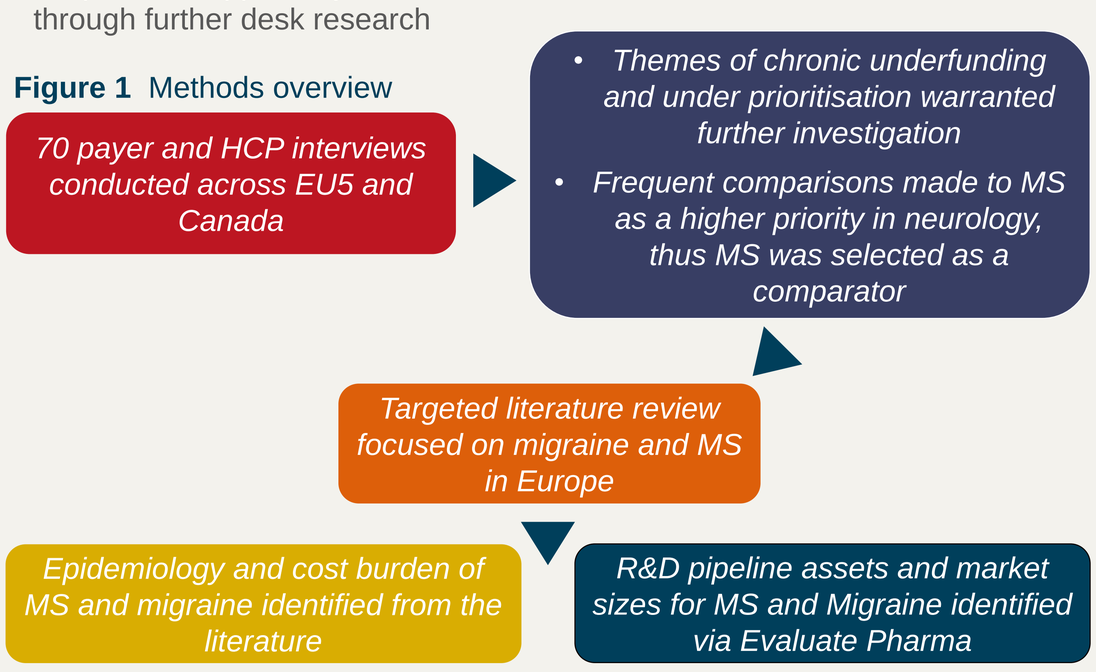
OBJECTIVE(S)

- To examine the relative mismatch in resource allocation between a high burden disease with high prevalence and low mortality, and a high burden disease with a relatively low prevalence and high mortality

METHODS

- In 2021/2022, Cogentia conducted a primary research project, interviewing payers and HCPs on the migraine treatment landscape
- Themes of under-treatment, under-diagnosis, under-funding, stigma, and poor education recurred frequently across markets, prompting further investigation
- For the purposes of this research, Migraine and MS were selected due to their frequent reference in primary research
- Based on expert interviews we hypothesised that there would be a significant difference in R&D investment and market size between the two indications despite their apparently similar burden, and set out to examine these factors through further desk research

Figure 1 Methods overview



RESULTS

Primary research insights

- 70 payers & HCPs in the EU5 and Canada indicated migraine was under-prioritised relative to other neurological conditions in their institution
- Emergence of new effective treatments in migraine widely anticipated to be met with increased access restrictions rather than larger budgets
- Stigma and poor education emerged as a key theme in migraine treatment

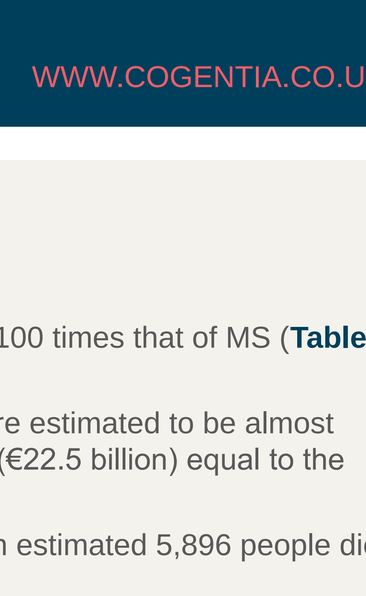
RESULTS

Literature review insights

- The estimated prevalence of migraine in Europe is ~100 times that of MS (**Table 1**)
- The cost burden across Europe for these diseases are estimated to be almost identical, with the midpoint of estimates for migraine (€22.5 billion) equal to the burden of MS identified in recent literature
- No deaths are directly attributed to migraine, while an estimated 5,896 people die from MS annually in Europe
- There are between 3 and 4 times more assets in development for MS compared to migraine. This trend continues across all phases of development (**Figure 2**), but is greatest in the preclinical stage where there are almost 9 MS pipeline assets for every asset in development for migraine.

Table 1 A comparison of economic and epidemiological factors between migraine and MS in the EU27. *Market size values are global due to lack of data for Europe only.

DISEASE	MIGRAINE	MULTIPLE SCLEROSIS
PREVALENCE	50.96 million[1,2,3]	0.63 million[9]
COST BURDEN	€18 billion - €27 billion[4,5,6]	€22.5 billion[9,10]
MORTALITY	0	5896[11]
PIPELINE (GLOBAL)	58[12]	231[12]
MARKET SIZE (GLOBAL)*	$4.18 billion[12]	$22.16 billion[12]



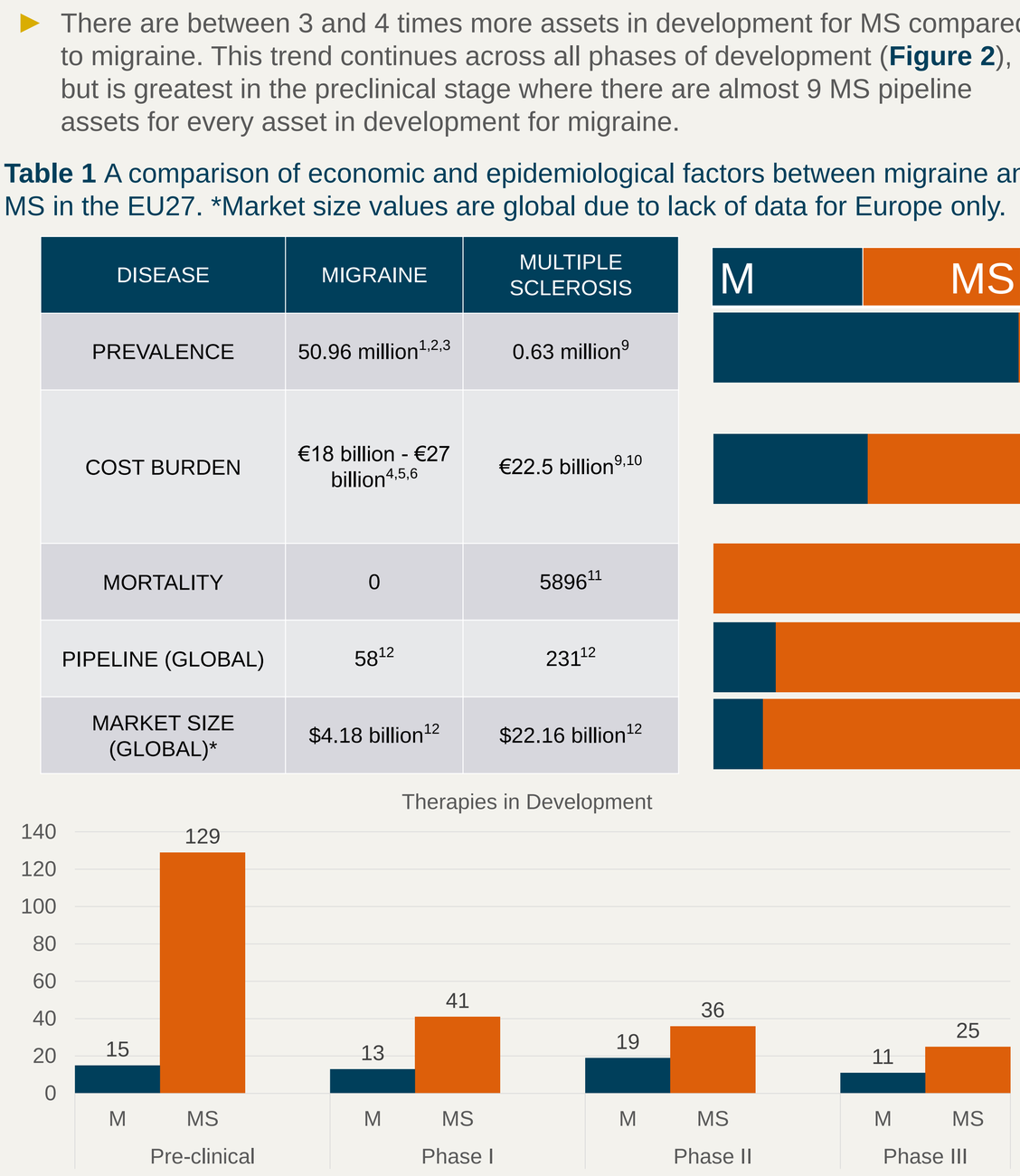


Figure 2 A bar chart comparing the pipelines for migraine and MS from pre-clinical to phase III[12]. M = Migraine, MS = Multiple Sclerosis

DISCUSSION

- Desk research revealed that, despite a comparable cost burden and the much higher prevalence of migraine, market value and research activity in MS are many times higher than that for migraine
- This underscores a mismatch between pharmaceutical innovation and public health needs found throughout the literature[13]
- Primary research shows that migraine budgets are constrained and not expected to increase, and may even see further access restrictions with the introduction of new therapies
- In addition, poor education and awareness around migraine persists and contributes the stigma still associated with the disease
- The lack of awareness and stigma surrounding migraine may be a driver of its low prioritisation by health systems, as could it's low mortality. Further research is needed to fully understand these drivers

CONCLUSIONS

- This research further confirms concerns raised by KOLs during primary research on the under prioritisation of migraine relative to other diseases of similar burden
- Promoting awareness of migraine and banishing the remaining stigma around the disease is crucial to improving care and access
- Further research is required to demonstrate the significant public need of migraine patients and to incentivise a re-evaluation of migraine funding
- In our example, the high mortality disease receives significantly more attention and investment from both industry and health systems despite similar burden. Further research is required to determine how widespread this trend is, and to separate other factors such as prevalence and disease awareness from mortality as drivers of this discrepancy

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