



Economic Burden of Multiple Sclerosis in Saudi Arabia

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INTRODUCTION

Multiple sclerosis (MS) is a chronic autoimmune-mediated disorder, often leading to severe physical or cognitive impairment that impacts patients' quality of life. As MS prevalence in Saudi Arabia increases, healthcare systems also have a substantial and heavy economic burden.

OBJECTIVES

- Estimate the economic burden of MS in Saudi Arabia.
- Understand the cost drivers from a healthcare payer perspective.

METHODS

- ➔ **Study Design:** Retrospective, prevalence-based single-center cost of illness study.
- ➔ **Setting:** King Saud University Medical City, Riyadh.
- ➔ **Perspective:** Healthcare perspective.
- ➔ **Study period:** Medical records reviewed in the period 2018-2020.
- ➔ **Statistical analysis:** A bottom-up micro-costing approach was conducted to estimate the direct medical costs. Descriptive and inferential statistics were performed.

RESULTS

A total of 193 MS patients were included in this study with a mean age of 33 years. More than a half (71%) of the study sample were male patients, and majority (84%) were diagnosed with RRMS.

In addition, 139 patients (72%) were at a mild stage of MS based on their EDSS score, and 110 patients (57%) had a disease duration exceeding 5 years.

Furthermore, 96 patients (50%) had one to two relapses, while 36 of them (18%) had three to five, and the rest (32%) did not experience any relapses.

	Count (N=193)
Male gender	137 (71%)
Age	
≥ 30	91 (47%)
< 30	102 (53%)
Disease duration	
≥ 5 years	110 (57%)
< 5 years	83 (43%)
MS classification	
RRMS	163 (84%)
Non-RRMS	29 (16%)
MS stage based on EDSS	
Mild	139 (72%)
Moderate	30 (16%)
Severe	24 (12%)
Relapses	
1-2	96 (50%)
3-5	36 (18%)
No relapse	61 (32%)

Table 1. Baseline characteristics



Figure 1. Cost of MS patient between different variables

The total estimated economic burden of MS during the study period was 31,180,771 SAR, while the median annual cost per patient was 58,527 SAR.

The charts above express the difference in cost between different variables. In gender, male patients had significant increase in cost compared to female patients ($p=0.02$). Additionally, patients diagnosed with RRMS had showed significant increase in cost compared with patients with non-RRMS ($p=0.03$). Variables like age and disease duration revealed no significant result ($p=0.4$, $p=0.1$, respectively)

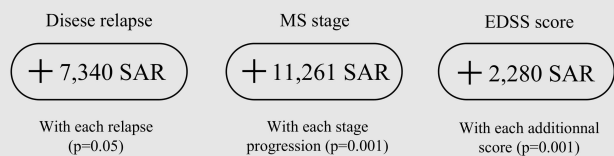


Figure 2. Regression analysis for costs

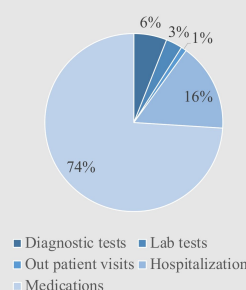


Figure 3. Major drivers of healthcare expenditures associated with MS

Each MS relapse was significantly associated with SAR 7,340 increase in cost ($p=0.05$). In addition, the cost was significantly associated with MS stage and EDSS score, with each further progression costing SAR 11,261 ($p<0.001$) and SAR 2,280 ($p<0.001$), respectively. The majority of the estimated total cost (74%) was attributed to MS medications, followed by hospitalization, diagnostic tests, lab tests (16%, 6%, 3%) respectively.

CONCLUSIONS

MS imposes a substantial economic burden on the Saudi healthcare system. Decision makers may consider better strategies to lower the cost of medications by considering cost-effective approaches to improve the value and affordability for the healthcare system.