

# Health Economics and Disease Burden of Inpatients with Multiple Sclerosis of a Multicenter Study

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## Abstract

By examining the direct, indirect, and intangible expenses, the goal is to gauge the illness burden and health economics of inpatients with multiple sclerosis in China. In 50 centres, a cross-sectional retrospective analysis covered a total of 863 patients. The cost of hospitalisation and medications used outside of hospitals were used to calculate the direct economic burden, and the human capital technique was used to calculate the indirect economic burden. The intangible economic cost was expressed in terms of the disability-adjusted life year. Calculating the incremental cost-utility ratio allowed for cost-utility analysis using DALYs as measures of health benefits.

**Keywords:** Multiple sclerosis; Disease burden; Health economics; Disability-adjusted life years

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## Introduction

The average annual direct economic burden, annual daily pharmaceutical costs, annual DALY, annual indirect economic burden, and annual indirect economic burden were, in order, Yuan, Yuan, 10.89 Yuan, and Yuan. For the two-week study period Years, the daily pharmaceutical cost, the direct economic burden, and the indirect economic burden each represented a portion of the overall economic burden [1]. The prevalence of the disease and the quantity of remission episodes were not statistically significant [2]. The disease-modifying treatment group experienced greater direct and overall cost burdens than the non-DMT group, although there was no statistically significant difference in DALYs [3]. According to CUA, MS inpatients in the DMT group consistently obtained one more DALY than those in the non-DMT group. Chinese people who are young and middle-aged experience the greatest DALY losses. In this two-year trial, CUA encouraged the use of DMT medications to raise the financial burden and DALYs. Further follow-up monitoring is necessary because the follow-up period is still brief [4]. A chronic autoimmune disease that affects the central nervous system, multiple sclerosis is known to cause considerable early impairment [5]. The World Health Organization estimates that there are million MS sufferers globally, representing 6.29 percent

of all neurologic disorders and 0.1% of the burden of disease for all neurologic diseases. MS has a peak incidence around the age of 30, making it a major contributor to no traumatic impairment in people who are young to middle-aged. The indirect costs of productivity loss are so high [6]. The expenditures associated with disability and absenteeism is around four times greater for MS patients than for non-patients [7]. Over one-third of MS's overall expenses are attributable to productivity losses. Prescription medicines, however, are the single biggest factor driving healthcare costs connected to MS [8], which make up more than half of all direct healthcare expenses. Particularly, during the past ten years, the price of disease-modifying medications has skyrocketed [9]. The high prices of DMTs have a series of detrimental effects on patients, from exorbitant cost-sharing to constrictive insurance restrictions that may have a severe impact on therapy [10].

## Discussion

Additionally, expensive DMTs create a significant strain on the healthcare system [11]. Multiple recurrences occur during the course of MS, which causes symptoms and indicators to worsen and slowly exacerbates the condition [12]. Currently, the major goals of MS therapy are to control the illness while it is still acute, lower the frequency of relapses, increase the length of the

remission, and lower the rate of impairment [13]. Despite being a chronic, uncommon condition, MS China's high disability rate and recurrence rate have placed a significant burden on families and society, including direct financial costs associated with diagnosis and treatment, indirect financial costs, and intangible financial costs related to their inability to work as a result of their disability [14]. The WHO's suggested disability-adjusted life year can be used to calculate the intangible economic cost [15]. To the best of our knowledge, no research on the disease burden of MS has been conducted in China, despite the fact that MS is a persistently disabling uncommon illness. Additionally, statistics from other nations might not accurately reflect circumstances in any individual nation. The creation of an MS health policy has been severely constrained by the absence of these crucial epidemiological statistics. Consequently, estimating the MS epidemiology is required. Chinese indexes in this situation, a health economics analysis is carried out to determine which health activity plan has the highest per-unit cost and benefit. The outcomes may result in more effective utilisation of medical resources and health decision-making. There is now a significant knowledge gap in China's research on the financial costs and health economics of MS. Studying the financial burden and health economics of MS patients in China can assist the healthcare system, neurologists, and MS patients in China establish healthcare plans and provide them a foundation on which to base their decisions about the best course of treatment. This multicenter study's goal was to evaluate the physical, intangible, and direct expenses of MS patients in hospitals across China. In 50 facilities across China, a no interventional, cross-sectional, retrospective research on MS patients was carried out. Patients from 35 provinces were included in the sample, including municipalities from the northern, north-eastern, northwesterns, and eastern China's south central and south-western provinces. During the study period of 2017 to 2018, MS patients hospitalised at the study locations who met the standard MS diagnostic criteria were recruited for the study. Despite receiving assistance from mycophenolate mofetil capsules, sulphur azathioprine, tacrolimus, cyclophosphamide, methotrexate, rituximab, low-dose hormones, and traditional Chinese medicine, patients were excluded if they had trouble understanding and being able to respond to the electronic questionnaire. Additionally, the following medications were included for the symptomatic treatment of the condition: carbamazepine, tizanidine, gabapentin, baclofen, amitriptyline, pregabalin, selective norepinephrine and norepinephrine reuptake inhibitors, noradrenergic and specific serotonergic antidepressants, modafinil, amantadine, trihexyphenidyl hydrochloride. Supplementary provides an in-depth patient survey. The electronic survey was completed. When patients or their family members entered the ID into the computer system freely by patients. An attending physician with MS expertise helped patients and their families who were unable to complete the questionnaire on their own by interviewing them or following up with them by phone, and the data were then exported for cross-sectional retrospective analysis. All doctors engaged in the trial were blinded to the clinical state of the patients in order to prevent bias. Furthermore, there was no way to identify patients, double-check responses, or fill in any blanks because all responses were fully anonymous. The study was carried out in compliance

with the latest versions of the Declaration of amendments.

## Conclusion

The relevant ethics institutions de-identified the included patients' data and acquired their signed, informed permission. Various patient populations for the student and employed groups, different summaries of the cost descriptions were provided. Each patient's health costs included both in-hospital and out-of-hospital prescription medication costs. Using the human capital technique, which values a person's output at the market rate, indirect costs were computed. In order to avoid underestimating the indirect costs, the indirect costs for working patients were estimated using the gross hourly wage, whereas the indirect costs for jobless patients were determined using the minimum hourly wage. The cost of sick days taken by the employed population over the previous year was determined by multiplying the number of days missed. Helsinki and received approval from the various institutional ethical review boards of all participating centres. According to the pay rate stated in the job status section. The number of hours missed each week multiplied by was used to determine the cost of lost study time for the student population during the study. The given yearly wage was used to assess the costs of premature retirement and job disability pensioners. The source data, daily/indirect/total economic burden, DALYs, and other indicators were compiled and summarised using Excel 2003 software, one of the four widely used health economics assessment methodologies in the field of healthcare. The statistical analysis was performed using R software, version 3.1. The mean standard deviation was used to describe quantitative data that followed the normal distribution, whereas the median was used to describe quantitative data that did not. Based on a stratified study of the economic cost on the basis of age, DMT status, the quantity of recurrences, and EDSS score. In order to compare the two-sample data, the Mann-Whitney U test and the Kruskal Wallis test were applied. Outliers for continuous variables were examined with the conventional formula. The outcome is also consistent with Gabriel's statistics, which showed that prescription pharmaceuticals accounted for the majority of direct costs, which made up the majority of the total cost. Additionally, according to Du et al., the total cost per person for 267 MS patients who were inpatients and outpatients in China was Yuan and Yuan, respectively. However, the scope of their study did not involve gathering information on the direct and indirect economic costs and the quality of life associated with health. This study's key finding demonstrates that the direct economic impact of MS patients who are hospitalised in 2018 is connected to visual function, not sensory or pyramidal function, in a substantial way. Comparable to Saima, where optic neuritis and myelitis are the most frequent first clinical symptoms, its outcome is similar to that of Saima. As visual neuritis is the most prevalent initial symptom of MS patients and is easily converted into a frequent symptom after recurrence, the results obtained are an important indication of the disability index of MS patients in China. It could be brought on by sensory disruption and limb weakness, which have less of an effect on daily living. Patients with visual disorders worry about the disease's ongoing progression and need vigorous therapy to extend their stay in the hospital.

## Acknowledgement

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## Conflict of Interest

None

## References

- 1 D'Angelo S, Tramontano G, Gilio M (2017) Review of the treatment of psoriatic arthritis with biological agents: choice of drug for initial therapy and switch therapy for non-responders. *Open Access Rheumatol* 9: 21–28.
- 2 Amaral T, Meraz Torres F, Garbe C (2017) Immunotherapy in managing metastatic melanoma: which treatment when? *Expert Opin Biol Ther* 17: 1523-1538.
- 3 Dummer R, Hauschild A, Lindenblatt N (2015). Cutaneous melanoma: ESMO clinical practice guidelines for diagnosis, treatment and follow-up. *Ann Oncol* 26: v126-v132.
- 4 Garbe C, Peris K, Hauschild A (2016) Diagnosis and treatment of melanoma. European consensus-based interdisciplinary guideline—update 2016. *Eur J Cancer* 63: 201-217.
- 5 Liu BL, Robinson M, Han ZQ (2003) ICP34.5 deleted herpes simplex virus with enhanced oncolytic, immune stimulating, and anti-tumour properties. *Gene Ther* 10: 292-303.
- 6 Moesta AK, Cooke K, Piasecki J (2017) Local delivery of OncoVEX(mGM-CSF) generates systemic antitumor immune responses enhanced by cytotoxic T-lymphocyte-associated protein blockade. *Clin Cancer Res* 23: 6190-6202.
- 7 Andtbacka RH, Kaufman HL, Collichio F (2015) Talimogene laherparepvec improves durable response rate in patients with advanced melanoma. *J Clin Oncol* 33: 2780-2788.
- 8 Harrington KJ, Andtbacka RH, Collichio F (2016) Efficacy and safety of talimogene laherparepvec versus granulocyte-macrophage colony-stimulating factor in patients with stage IIIB/C and IVM1a melanoma: subanalysis of the phase III OPTiM trial. *Onco Targets Ther* 9: 7081-7093.
- 9 Oyinlola JO, Campbell J, Kousoulis AA (2016) Is real world evidence influencing practice? A systematic review of CPRD research in NICE guidances. *BMC Health Serv Res* 16: 299.
- 10 Kennedy Martin T, Curtis S, Faries D (2015) A literature review on the representativeness of randomized controlled trial samples and implications for the external validity of trial results. *Trials* 16: 495.
- 11 Cramer JA, Roy A, Burrell A (2008) Medication compliance and persistence: terminology and definitions. *Value Health* 11: 44-47.
- 12 Xing Y, Bronstein Y, Ross MI (2011) Contemporary diagnostic imaging modalities for the staging and surveillance of melanoma patients: a meta-analysis. *J Natl Cancer Inst* 103: 129-142.
- 13 Mohr P, Eggermont AM, Hauschild A (2009) Staging of cutaneous melanoma. *Ann Oncol* 20 : vi14-vi21.
- 14 Miura JT, Zager JS (2018) Intralesional therapy as a treatment for locoregionally metastatic melanoma. *Expert Rev Anticancer Ther* 18: 399-408.
- 15 Marabelle A, Tselikas L, de Baere T (2017) Intratumoral immunotherapy: using the tumor as the remedy. *Ann Oncol* 28:xii33-xii43.