



The economic burden of epilepsy in a sample of people with epilepsy in China

Jianming Liu, Zhiliang Liu*, Fanxin Meng

Ward three of Bayi Brain Hospital, The Military General Hospital of Beijing People's Liberation Army, No. 5, Nan Men Cang, Beijing 100700, China

Received 3 June 2012; received in revised form 12 July 2012; accepted 15 July 2012
Available online 31 July 2012

KEYWORDS

Epilepsy;
Cost of illness;
Economic burden;
China

Summary

Purpose: Epilepsy causes a significant burden to both patients as well as society. The primary aim of this study was to calculate the factual excess costs of epilepsy in China in order to provide essential information regarding the treatment of the epilepsy for both individuals and society as a whole.

Methods: This study was performed on a retrospective cohort of medically treated patients. Data collected from 500 patients were analyzed in a standardized format, and included clinical characteristics, utilization of sources as well as the associated costs of epilepsy.

Results: Based on our analyses, a modest estimate of the direct cost of epilepsy in China is roughly RMB 3860 (USD 594) per person per year. The main expenditures included treatment cost followed by the cost of living and inpatient care. The cost of informal treatment accounted for roughly 41% of all costs. The excess expenditures were similar for gender and the living place; however, our findings suggest that the composition proportions were different.

Conclusion: Our findings demonstrate that epilepsy has a significant impact on individual medical expenditure, and places a heavy economic burden to both patients and the nation of China. Therefore, appropriate treatment and management of epilepsy must be assessed not only to increase quality of life, but also to consider the financial implications of the prescribed treatments for this disease.

© 2012 Elsevier B.V. All rights reserved.

Introduction

Epilepsy is a common and widespread neurological disorder that affects people of all ages and socioeconomic classes

worldwide. Epilepsy is associated with a considerable burden on the society and on the families of epileptic patients. The mean prevalence of epilepsy is estimated at 0.52% in Europe (Forsgren et al., 2005) and 0.68% in the United States (Hauser et al., 1991), and has been estimated as high as 1.5% in some developing countries (Preux and Druet-Cabanac, 2005). Numerous studies have assessed the burden of epilepsy on society in various countries including India (Thomas et al., 2001), Burundi (Nsengiyumva et al., 2004),

* Corresponding author. Tel.: +86 13910521469.
E-mail address: slxjm10282@163.com (Z. Liu).

Zambia (Birbeck et al., 2007), European countries (Begley and Beghi, 2002; Jennum et al., 2011), and the United States (Yoon et al., 2009). Developing countries carry 90% of the financial burden of epilepsy, and roughly 85% of the world's 50 million people with epilepsy live in developing countries (De Boer, 2002). While the economic burden caused by epilepsy has not been adequately examined in developing countries, these studies indicate that the burden of epilepsy is especially heavy for the families of epileptic patients. This heavy burden can be attributed to the fact that developing countries rarely have a well-developed insurance system or social security program that covers epilepsy-related costs.

It has been reported that approximately nine million people suffer from epilepsy in China, and six million patients have been diagnosed with active epilepsy. Four hundred thousand new cases are documented each year when a medically intractable rate of 30% is assumed. The societal costs of epilepsy are also very high in China due to the fairly high frequency of epilepsy in the general population. To date, a preliminary assessment of selected expenses on epilepsy care has been estimated for Hong Kong (Mak et al., 1999), and one study has analyzed the cost of epilepsy in mainland China (Hong et al., 2009). However, the subjects from the study in China largely resided in one province of China. In addition, only a small number of patients were examined, so the findings may not represent the status of mainland China.

A better understanding of the economic cost of epilepsy will assist decision makers in identifying the most cost-effective treatment in order to better allocate the limited resources for healthcare in China. Therefore, to provide further baseline data for future evaluations on the economic impact of epilepsy on healthcare in China, we performed a pilot study to estimate the direct costs of epilepsy in China based on a retrospective investigation.

Methods

Subjects

The subjects examined in this study included patients with epilepsy that were treated at the Military General Hospital of Beijing People's Liberation Army from October 2009 to January 2012. For inclusion in this study, patients presented with two or more unprovoked seizures required for the diagnosis of epilepsy (Blume et al., 2001). The exclusion criteria were as follows: (1) when the diagnosis of epilepsy could not be determined or a single seizure, (2) patients in remission and not requiring anti-epileptic drugs (AEDs), (3) patients who had undergone epilepsy surgery, (4) patients with psychogenic seizures or uncertain diagnosis of epilepsy, (5) patients with less than one year of follow-up by the end of 2012, (6) patients currently involved in AED trials, (7) patients with other major neurologic disabilities such as mental retardation, aphasia, or motor deficits, and (8) patients where data could not be identified.

Measures

The economic cost of epilepsy was estimated by determining the annual cost of illness per patient diagnosed with epilepsy. In our study the total healthcare expenditures were

calculated as the sum of all relevant direct costs due to the disease. These dependent variables included (1) inpatient and outpatient care, (2) number of outpatient visits and inpatient admissions, (3) means of transportation to the clinic, (4) diagnostic tests, (5) emergency room services, (6) the cost of medical consultation, (7) physician visits, (8) laboratory tests, (9) drug costs, and (10) direct nonmedical costs (e.g., social services, traffic fees, preventive care foods, and purchase of special equipments such as stair and bed lift, rails, walking aids, wheel chairs, medically related travel expenses, and professional home care).

This information was obtained prior to the evaluation from patients by using the questionnaire. We classified all these costs into three sections. Part I assessed the inpatient cost. Part II assessed the outpatient cost, and was divided into three sections including (1) Part IIa which assessed the cost of drugs including the formal and informal drugs, (2) Part IIb which assessed the costs of tests, and (3) Part IIc which assessed the cost of living expenses (e.g., transportation, bed and board). Part III assessed other related costs for the subjects. In addition, the cost of informal treatment was assessed separately, which included informal drugs or other special methods of treatment and all other related costs (e.g., tests, transportation, bed and board). Furthermore, the influence of gender and whether the patient resided in urban or rural locations was also taken into account in the analyses.

Patients were asked to provide all of their expenses. If the patients were unable to provide these costs in a clear manner, the costs would be estimated according to the numbers of each item. Although a minor variation was observed in the price of drugs or certain tests between centers, the costs of each item were taken at market price. The annual cost was derived by dividing the lifetime cost by the mean duration of treatment in years. The initial valuation of cost items was in Chinese currency Renminbi (RMB). For reference, the exchange rate was converted into United States Dollars with an exchange rate equaling USD 1 = RMB 6.5 for 2011. Because all patient data were anonymous, this research study did not require ethical approval. For comparisons between groups, categorical variables were summarized by using percentages.

Results

The samples in this study were obtained from all of mainland China. A total of 500 patients was studied, including 295 (59%) males and 205 (41%) females. The patients' mean age ($\pm$ SD) was 35.3 ($\pm$ 11.7) years, ranged from 2 years to 75 years of age. The onset of epilepsy ranged from the first month of life to 70 years of age (mean, 15.1 $\pm$ 10.7 years). The mean duration of epilepsy was 8.8 years. 57% of the patients resided in rural locations.

The average total direct cost of epilepsy was RMB 3860 (USD 594) per year per patient. In 2011, the mean annual income in China was RMB 19,118 (2941 USD). Hence, the annual cost of epilepsy per person constituted 20.2% of the mean annual income in China.

The cost of each part was as follow:

Part I was Inpatient cost. The average number of hospitalization was 0.2 per patient per year, the mean duration

Download English Version:

<https://daneshyari.com/en/article/6015947>

Download Persian Version:

<https://daneshyari.com/article/6015947>

[Daneshyari.com](https://daneshyari.com)