EPIDEMIOLOGY OF MULTIPLE SCLEROSIS IN LATIN AMERICA: CRITICAL ANALYSIS OF THE LITERATURE

Authors: Thomas R. Einhorn, PhD; Basil G. Berezia, MSc (PhD Cand.); Marco Machado, PhD.  
1Leslie Dan Faculty of Pharmaceutical Sciences, University of Toronto, Toronto ON, Canada.  
2Bioneg, Instituto São Paulo SP, Brazil.

INTRODUCTION

- Rates of multiple sclerosis (MS) vary around the world, depending on genetics/risk factors, geography and possibly ultraviolet radiation.
- Accurate estimates of incidence and prevalence are necessary for estimating the burden of disease as well as planning and providing healthcare services.
- The purpose of this research was to summarize rates of prevalence, incidence and types of MS in Latin America.

METHODS

- Latin America was defined as the 24 countries identified by the World Health Organization (see Table 1).
- Acceptable studies included peer-reviewed articles and abstracts of presentations made at scientific conferences.
- All languages accepted. No restriction on date of publication.
- Studies must have calculated cross-sectional or longitudinal rates of prevalence, incidence and/or types of MS.
- Diagnosis could be made using any acceptable criteria, such as Schumacher, Poser, McDonald, or by neurologist examination.
- Types of MS were defined based on symptoms and presentation: relapsing remitting MS (RIRM), primary progressive (PPMS), secondary progressive (SPMS), progressive relapsing (PRMS).
- Searches made on Medline, Embase, LILACS, and Scielo from inception to the end of 2013.
- Hand searches of references lists from retrieved articles were also carried out.
- Data were tabulated and analyzed descriptively.

RESULTS

- 203 articles reviewed in full; 88 were rejected and 115 analyzed
- 23% did not specify diagnostic criteria; of those that did specify, 66% used the criteria of Poser, 48% used McDonald, 5%, Schumacher, and 8% other (many used >1, hence >100%
- 99% were full peer-reviewed articles, 4% were abstracts.

First publications:
- First case series of MS described in Cuba by Estrada 1965.
- First population based study in Latin America in Mexico in 1970 by Alter & Olvera.
- First clinical description of MS cases in South America was in Chile by Alvarez 1992.

Table 1 presents the numbers of articles and their countries of origin:
- Fourteen countries (58%) generated all of the research.
- The largest 3 countries (Brazil, Argentina and Mexico) produced 70% of all articles.
- Ten countries (42%) produced no articles.

RESULTS

- The incidence is also lower than the world average.
- The prevalence rates vary widely, reasons for variance were not often explored. Prevalence rate lower than the average world of 30 per 100,000.
- The prevalence rates lower than the global average of 2.5 per 100,000 per year.
- Pattern of MS types similar to what is found globally.
- No data found from any 42% of countries; those without data were the poorest.
- Very few studies examined incidence of MS in Latin America; none from (Brazil).

Quality of reporting was often poor
- Reporting of results was often incomplete, with missing data common.
- 41% of papers appeared only as abstracts.

DISCUSSION

- The present research was funded by Biogen Idec.
- Presented at the ISPOR 17th Annual European Congress, in Amsterdam, The Netherlands, Monday, 10 November 2014.

Table 2 summarizes the reported rates of prevalence of multiple sclerosis
- Average prevalence ~ 1.39 per 100,000 (Range: 1.4 to 2.5 per 100,000).
- Majority female (72%)
- Some authors perceived an increase in prevalence over time.
- 3 studies found no latitude gradient within countries (Chile, Argentina).
- Table 3 summarizes the reported rates of incidence of multiple sclerosis
- Very few studies (Total = 8: 1132 cases).
- Overall range of 0.15 to 1.8 per 100,000 per year.
- Estimates were based on small populations; largest study with sample of 721, otherwise samples ranged from 12-92.

Table 4 summarizes clinical epidemiology
- Data obtained from 10 countries (42% of those in Latin America).
- Three countries supplied 75% of the studies.
- 72% of sample with relapsing remitting MS.

CONCLUSIONS

- The prevalence of 1.9 cases of MS per 100,000 in Latin America is low to medium, and lower than the world average.
- The incidence is also lower than the world average.

- Clinical presentation of MS is similar to patterns in the rest of the world.
- Much information related to epidemiology is lacking; there is a need for high quality studies from all areas of the region.