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Biological medicines for the treatment of multiple sclerosis in latin america: a comparative pricing study

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1 INTRODUCTION

Comparing the prices of biological drugs used in the treatment of multiple sclerosis (MS), as well as their availability and affordability, in four Latin American countries. Latin America (LA): Brazil, Colombia, Peru and Mexico.

Peru shows the highest mg/PPP values in Latin America for ocrelizumab.

Table 2: Innovative and biosimilar medicines, in mcg, approved for the treatment of MS in Brazil and Colombia.

2 METHODOLOGY

An exploratory, cross-sectional study was conducted using secondary data on prices of biological drugs applied in the MS protocol. Registration information and marketing authorization for these products were collected from the drug regulatory agencies of each country and the prices adopted were obtained from the official reference price lists. In order to compare these values with those practiced in the market, the prices available in online pharmacies were used. Purchasing Power Parities (PPP) was the methodology chosen to compare purchasing power. Prices were calculated based on: (a) the defined daily dose (DDD), (b) the smallest unit of the drug (mg/mL, mcg, etc.) and (c) the value of a monthly treatment.

3 DEVELOPMENT

Table 1: Values (USD) and PPP analysis of biological drugs in the treatment of MS in LA countries and the US, in US dollars (US$) per presentation.

Princípio ativo	Unidade	EUA	Brasil		Colômbia		México		Peru	
		USD	USD	PPP*	USD	PPP*	USD	PPP*	USD	PPP*
Alentuzumabe	mg	2.376,4	949,7	375,4	542,6	0,4	SI	SI	SI	SI
Interferon β1a	mcg	329,1	2,6	1,0	21,1	0,0**	1,6	0,2	16,8	9,0
Interferon β1b	mcg	23,5	0,4	0,2	3,1	0,0**	1,2	0,1	0,4	0,2
Natalizumabe	mg	27,6	5,9	2,3	4,9	0,0**	3,7	0,4	0,0**	0,0**
Ocrelizumabe	mg	62,5	24,2	9,6	4,9	0,0**	SI	SI	27,6	14,7
Princípio ativo	**DDD**	**EUA**	**Brasil**		**Colômbia**		**México**		**Peru**	
		USD	USD	PPP	USD	PPP	USD	PPP	USD	PPP
Alentuzumabe	0,13	309	123,5	48,8	70,5	0,1	SI	SI	SI	SI
Interferon β1a	4,3	1.415	11,2	4,4	90,8	0,1	6,9	0,7	72,5	38,7
Interferon β1b	4	3,8	0,1	0,0**	0,4	0,0**	0,1	0,0**	0,1	0,0**
Natalizumabe	10	276	58,9	23,3	49,3	0,0**	37,1	3,8	0,0**	0,0**
Ocrelizumabe	3,29	205,6	79,8	31,5	16,0	0,0**	SI	SI	90,7	48,5

Source: Own authorship. * PPP values are for the years in which drug prices were collected in each country, except Colombia and Peru which have PPP 2021. SI = No information

**Values smaller than one decimal place

Translation:
Unidade: unity
Princípio ativo: active principle

The US was the country with the highest prices in dollars and PPP, both by DDD and the lowest presentation (Table 1). Brazil has the highest prices in Latin America in mg/PPP, followed by Colombia. Mexico, on the other hand, has the lowest values in mg/dollars and PPP. Of the 5 drugs in the sample,

Princípio ativo	**Tipo**	**Brasil**		**Colômbia**	
		USD	PPP	USD	PPP
Interferon β -1a	Inovador	11,6	4,6	41,1	0,03
Interferon β -1a	Biossimilar	2,6	1,0	63,3	0,05
Interferon β -1b	Inovador	0,4	0,2	3,1	0**
Interferon β -1b	Biossimilar	0,4	0,2	SI	SI

Source: Own authorship. Legend: SI = No Information ** Values smaller than one decimal place

Translation:
Princípio ativo: active principle
Tipo: type
Inovador: innovator
Biossimilar: biosimilar

The value of biosimilar medicines is lower than innovator medicines in Brazil (Table 2). Prices are 77.5% lower for interferon β-1a and 4.7% for interferon β1b in the country. Colombia showed higher value for the biosimilar (Interferon β-1a 0.05 mcg/PPP) when compared to the originator (Interferon β-1a 0.03 mcg/PPP), a difference of 60% (Table 3). Interferon β-1b could not be compared because, during the collection period, it was not available.

4 CONCLUDING REMARKS

Preliminary results point to difficulties in access to biological medicines for the treatment of MS among upper middle-income countries in LA, which have different markets and health systems. Studies like this one can serve as a basis for further research on the topic.

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