



Acute Bacterial Meningitis: epidemiology dynamic in the last 3 decades in a latinamerican pediatric center

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Background

To defeat meningitis by 2030 is a goal of the World Health Organization and to know its dynamic is essential to guide public health strategies.

Objective

The aim of this study was to describe the epidemiology of acute bacterial meningitis (ABM) in a Latin-American pediatric center

Methods

Retrospective study in children < 15 years, diagnosed with ABM, discharged between 1993 and 2020. Demographic, epidemiological, laboratory and clinical variables were studied. Descriptive statistics and Stata 15 analysis were used.

Results

ABM: 564, cases/year: 1993/2000: 39.4, 2001/2010: 9.2 and 2011/2020: 7.8

<1 yoa: 42%; 1-4yoa: 32%; ≥ 5 yoa: 25%

CFR: 4.2%, concentrated in 1993/2000, <5 years and due to *S. pneumoniae*.

Sequelae: 15.4%, 1993/2000: 13.3%, 2001/2010: 15.5% and 2011/2020: 26% mainly in *S. pneumoniae* (40.9%), *S. agalactiae* (33.3%) and Hib (31.3%)

<1 yoa: 25%; 1-4 yoa: 9.2% and 5 yoa: 7.8%.

Age-etiology predominance

Hib and *S. pneumoniae*: <5 yoa, while *N. meningitidis* was homogeneously distributed in all age groups. Not-known: < 1 yoa

Table 1: Acute bacterial meningitis cases by demographic, clinical and microbiological distribution, 1993-2020

	1993-2000		2001-2010		2011-2020		Overall	
	n	%	n	%	n	%	n	%
Cases	355	62,9%	106	18,8%	103	18,3%	564	100,0%
Age								
Overall (median)	24		15		4		17	
< 1 year old	128	22,7%	44	7,8%	64	11,4%	236	41,8%
1 - 4 years old	127	22,5%	40	7,1%	18	3,2%	185	32,8%
≥ 5 years old	100	17,7%	22	3,9%	21	3,7%	143	25,4%
Sex								
Male	188	33,3%	57	10,1%	62	11,0%	307	54,4%
Etiology								
<i>N. meningitidis</i>	210	37,2%	40	7,1%	21	3,7%	271	48,1%
<i>S. pneumoniae</i>	54	9,6%	23	4,1%	16	2,8%	93	16,5%
<i>H. influenzae</i> type b	33	5,9%	1	0,2%	4	0,7%	38	6,7%
Other	15	2,7%	18	3,2%	3	0,5%	36	6,4%
<i>S. agalactiae</i>	3	0,5%	3	0,5%	23	4,1%	29	5,1%
<i>L. monocytogenes</i>	2	0,4%	0,0%	0,0%	3	0,5%	5	0,9%
Not-known	38	6,7%	21	3,7%	33	5,9%	92	16,3%
Lethality								
	18	3,2%	3	0,5%	3	0,5%	24	4,3%
Sequelae								
	45	8,0%	16	2,8%	26	4,6%	87	15,4%

Figure 1. Acute bacterial meningitis cases by etiologies, 1993-2020

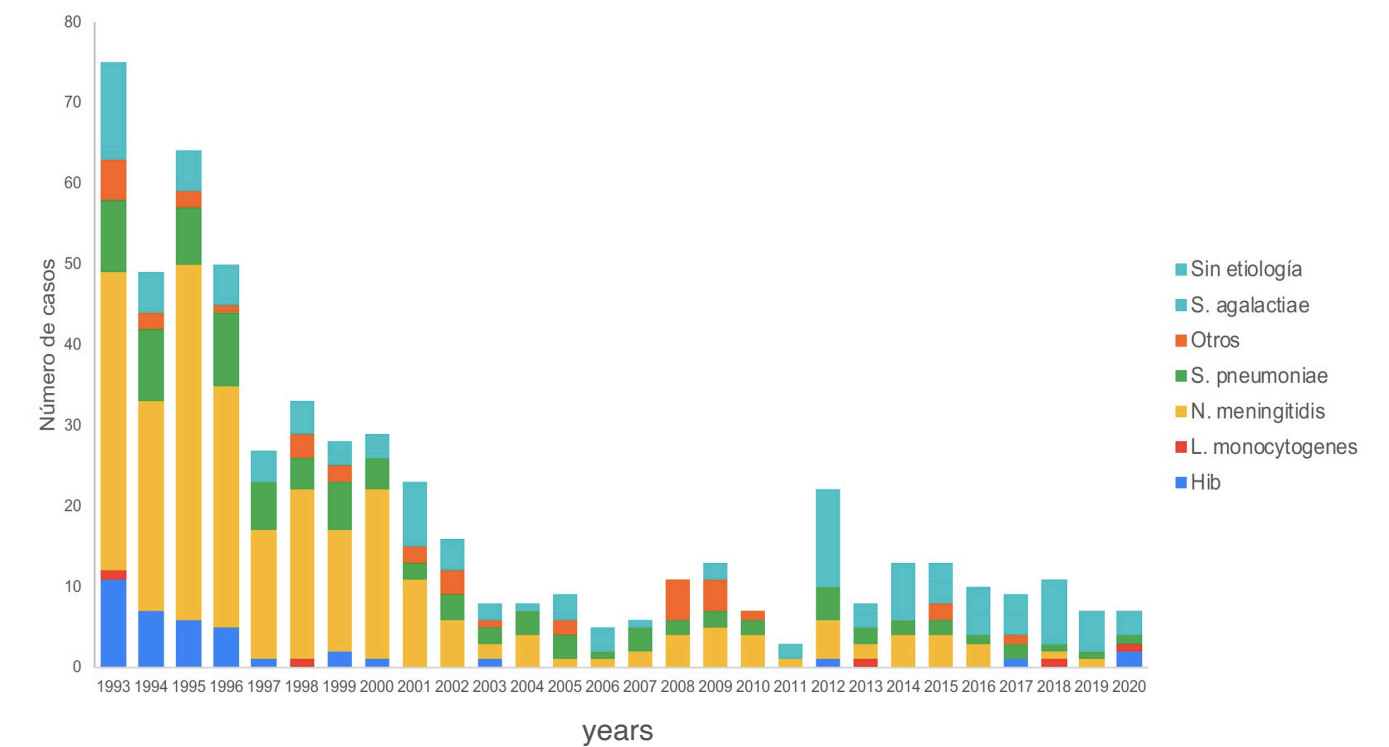


Figure 2. Acute bacterial meningitis sequelae by age and etiologies, 1993-2020

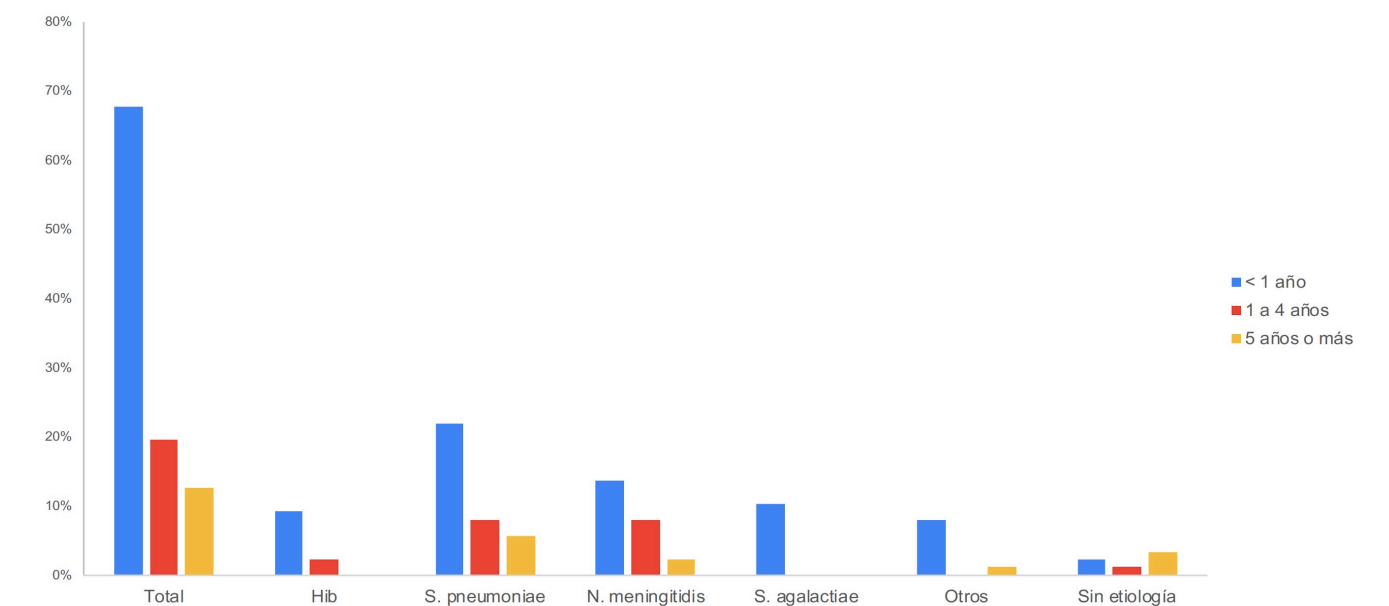
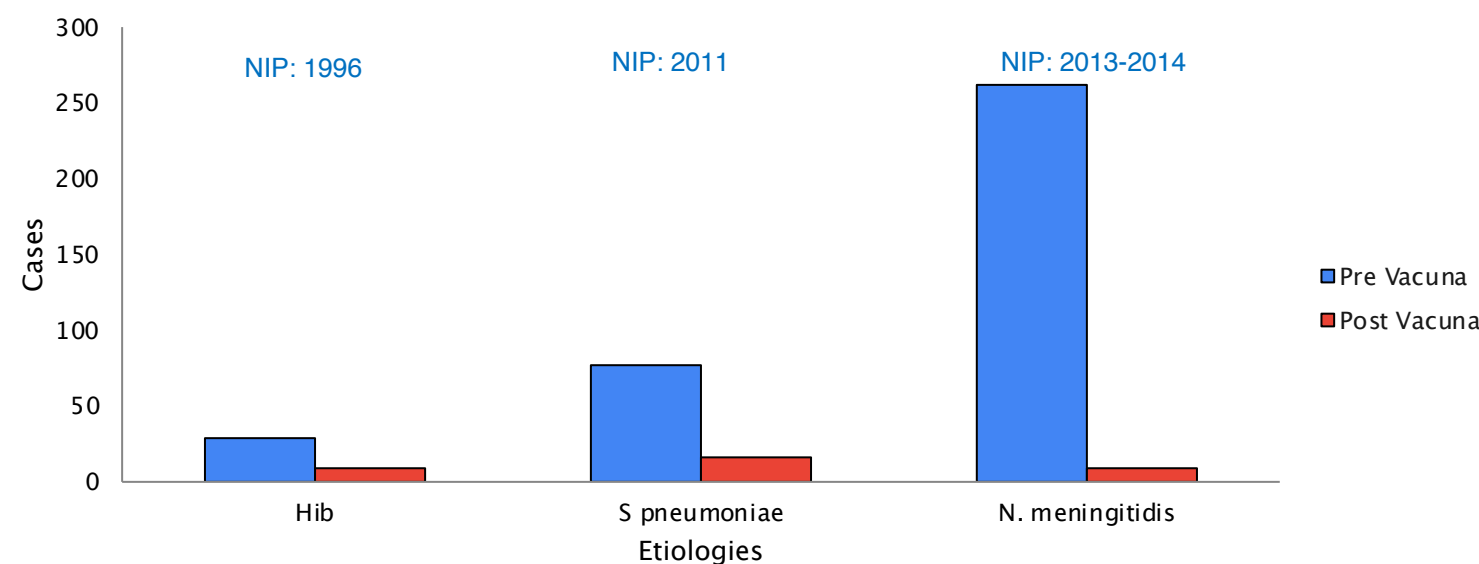


Figure 3. Acute bacterial meningitis cases by vaccine introduction in NIP, 1993 - 2020



Conclusions

Despite the decrease in cases and mortality after the introduction of vaccines against some etiologies, the pediatric burden of disease and sequelaerate of ABM is still high. Molecular techniques could optimize etiological diagnosis. Sequelae follow-up protocols are urgently need

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