

DIAGNOSTIC DELAY IN PATIENTS WITH MUCOPOLYSACCHARIDOSIS I: *THE PICTURE IN LATIN AMERICA*

**R. Giugliani,¹ S. Ospina,² J. Villalobos,³
P. Guerra,⁴ L. Sanchez,⁵ and L. Bay⁶**

¹Dep. Genetica/UFRGS and Medical Genetics Service/HCPA, Porto Alegre, RS, BRAZIL

²Universidad del Rosario, Bogotá, COLOMBIA

³Cátedra de Fisiología, Inst. Med. Experimental, Univ. Central de Venezuela, Caracas, VENEZUELA

⁴Hospital Puerto Montt, Universidad San Sebastián, Puerto Montt, CHILE

⁵Hospital de Especialidades No. 25. IMSS, Monterrey, Nuevo León, MÉXICO

⁶Hospital Nacional de Pediatría J. P. Garrahan, Buenos Aires, ARGENTINA



Introduction

- MPS I is a debilitating, progressive disease for patients of all phenotypes, and diagnostic delays are unfortunately common.
- The MPS I Registry is an ongoing, international, observational, voluntary data collection program to track disease progression and clinical outcomes in patients with MPS I irrespective of treatment status.
- Since its inception in 2003, almost 900 patients have been enrolled in the Registry from 33 different countries, including 6 in Latin America (LATAM).

Objective

To assess patient demographics and the delay between symptom onset, diagnosis, and treatment in MPS I patients from Brazil and the rest of LATAM compared to the Rest of World (ROW).

Methods

■ Study Population

- All MPS I patients enrolled in the MPS I Registry as of February 2010
 - Subset of patients in Brazil
 - Subset of patients in rest of LATAM
 - Subset of patients in ROW

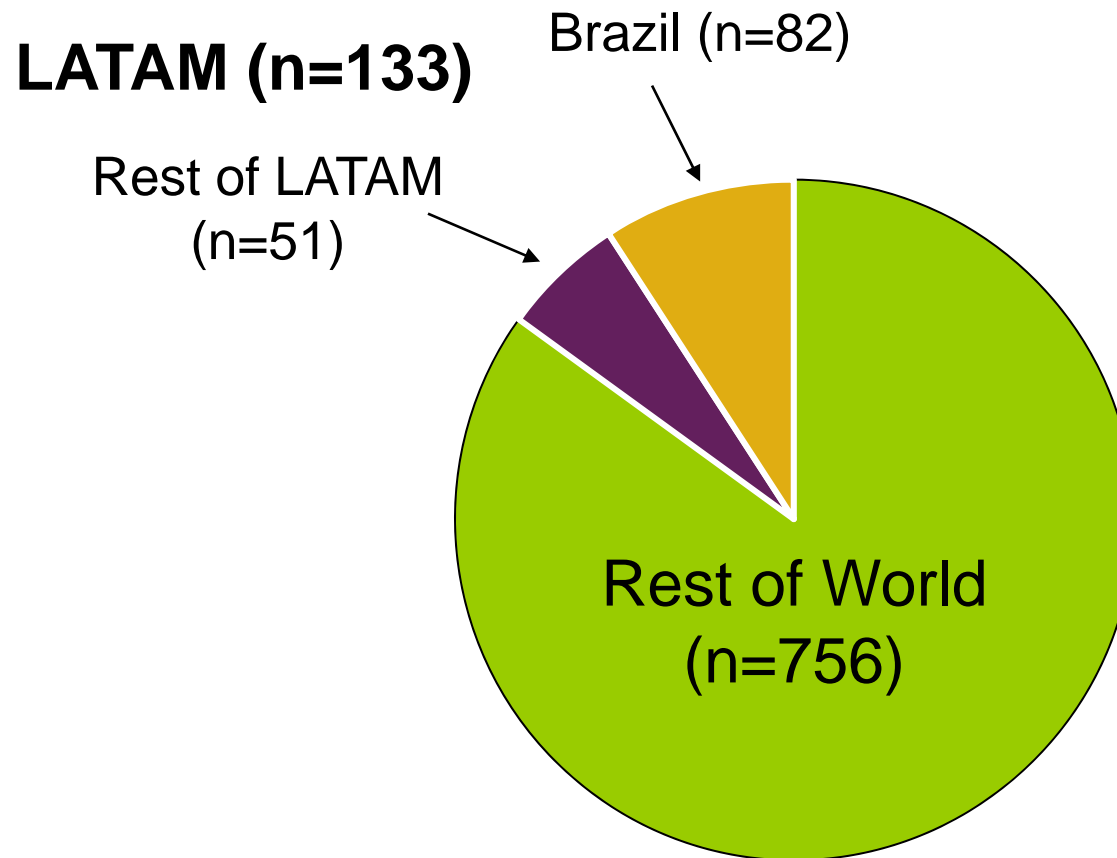
■ Assessments

- Patient demographics
- Phenotype distribution
- Genotype information* (data not shown)
- Symptom frequency and chronology* (detailed data not shown)

■ Statistical Analysis

- Data analysis was conducted using SAS (SAS Institute, Cary, NC)

MPS I Registry Enrollment in BRAZIL, LATAM and ROW



Total Registry Population N=889

LATAM Countries with Patients Enrolled in the MPS I Registry

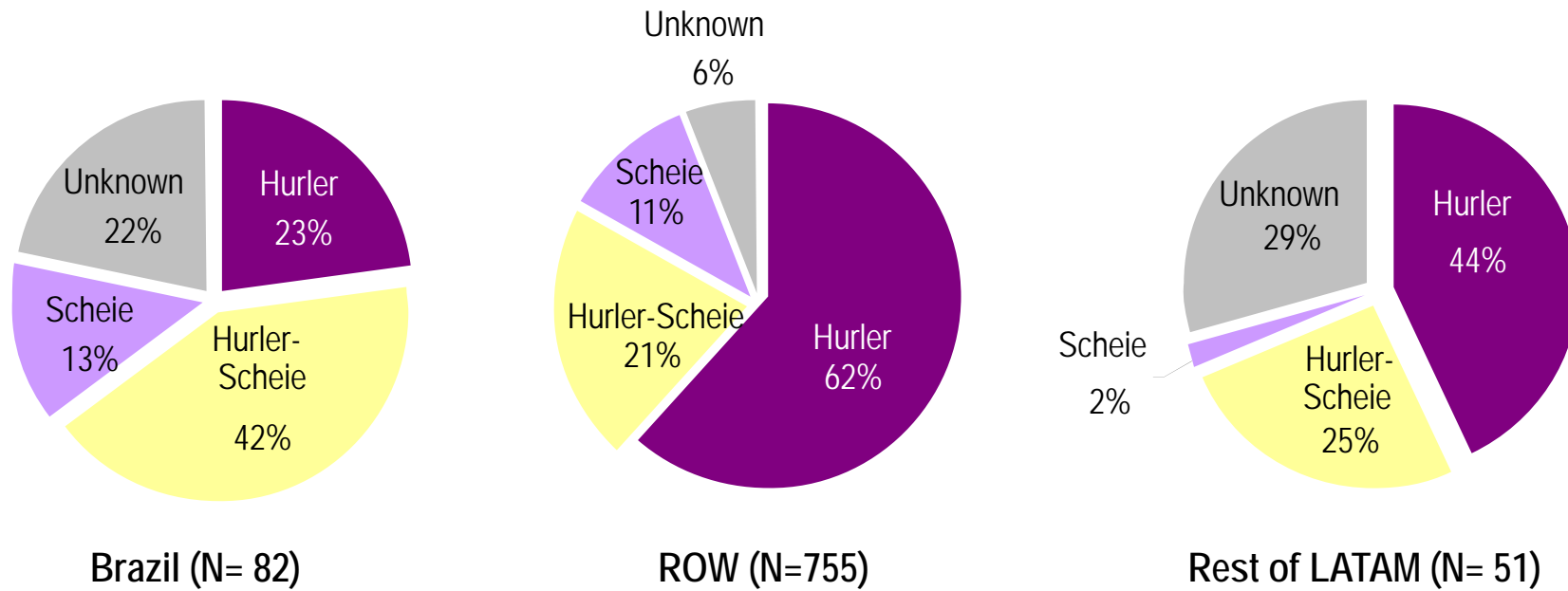
Country	Registry Enrollees
Brazil	82 (62%)
Mexico	20
Colombia	6
Venezuela	1
Chile	7
Argentina	17
TOTAL	133

LATAM not including Brazil, N=51

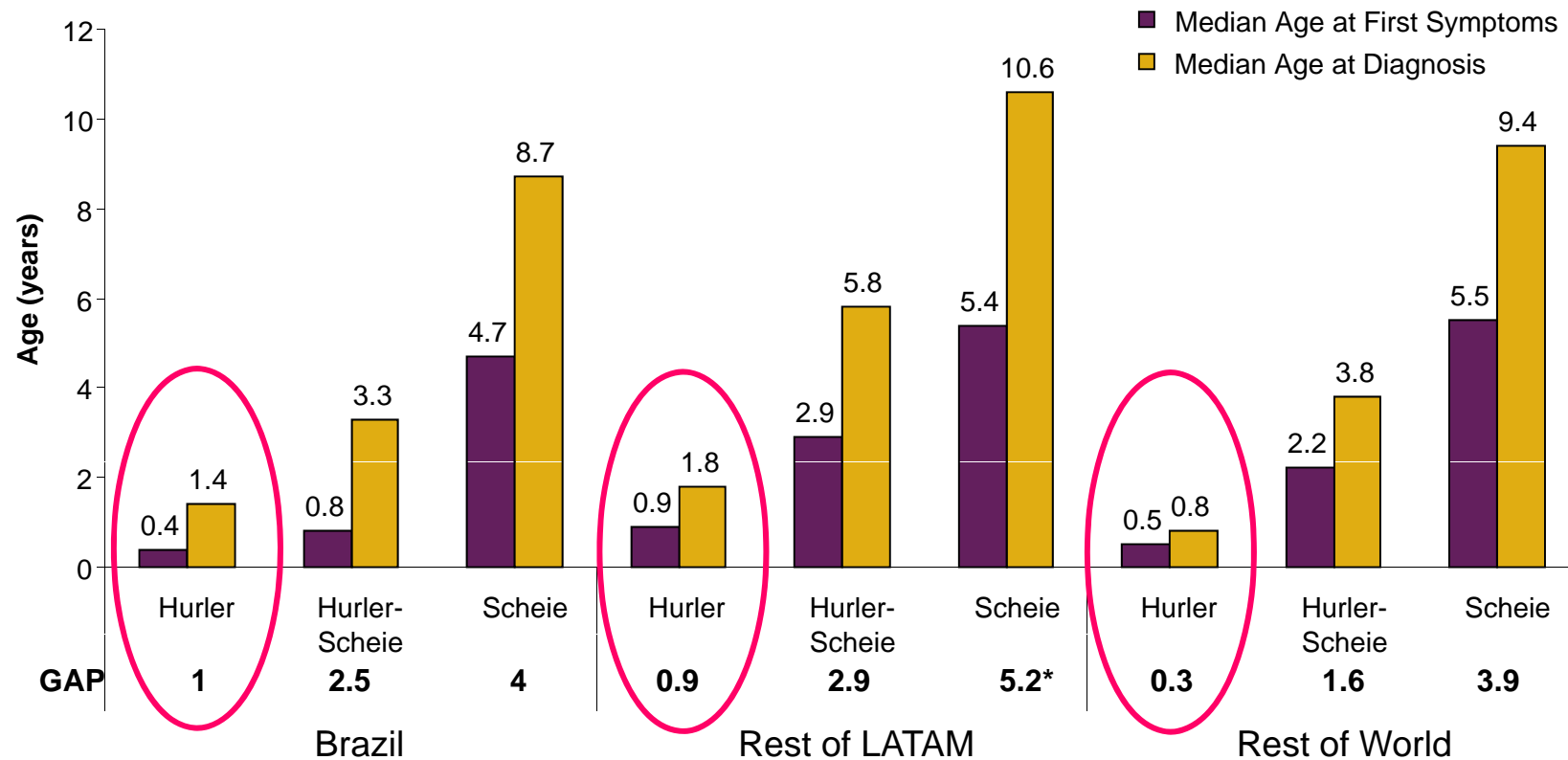
Demographics and Characteristics of All MPS I Registry Patients by Geographic Region

	Brazil	Rest of LATAM	Rest of World
Patients Enrolled	82	51	755
Sex, n (%)	82	51	755
Males	45 (55)	22 (43)	372 (49)
Females	37 (45)	29 (57)	383 (51)
Age at Diagnosis (y)	82	51	755
Mean (SD)	5 (6)	3 (3)	3 (6)
Median	3	2	1
Min, Max	0, 38	0, 16	0, 54
Treatment Status, n (%)	82	51	754
ERT only	70 (85)	39 (77)	345 (46)
HSCT only	1 (1)	0 (0)	196 (26)
ERT and HSCT	0 (0)	0 (0)	120 (16)
No ERT or HSCT	11 (13)	12 (24)	93 (12)
Age at First Treatment (y)	70	39	658
Mean (SD)	9 (8)	7 (4)	7 (9)
Median	7	6	2
Min, Max	1, 32	1, 15	<1, 63
Age at Death (y)	9	1	169
Mean (SD)	9 (5)	8	7 (7)
Median	8	8	5
Min, Max	2, 17	8, 8	<1, 47

Phenotype Distribution Among Registry Patients in Brazil, LATAM and ROW

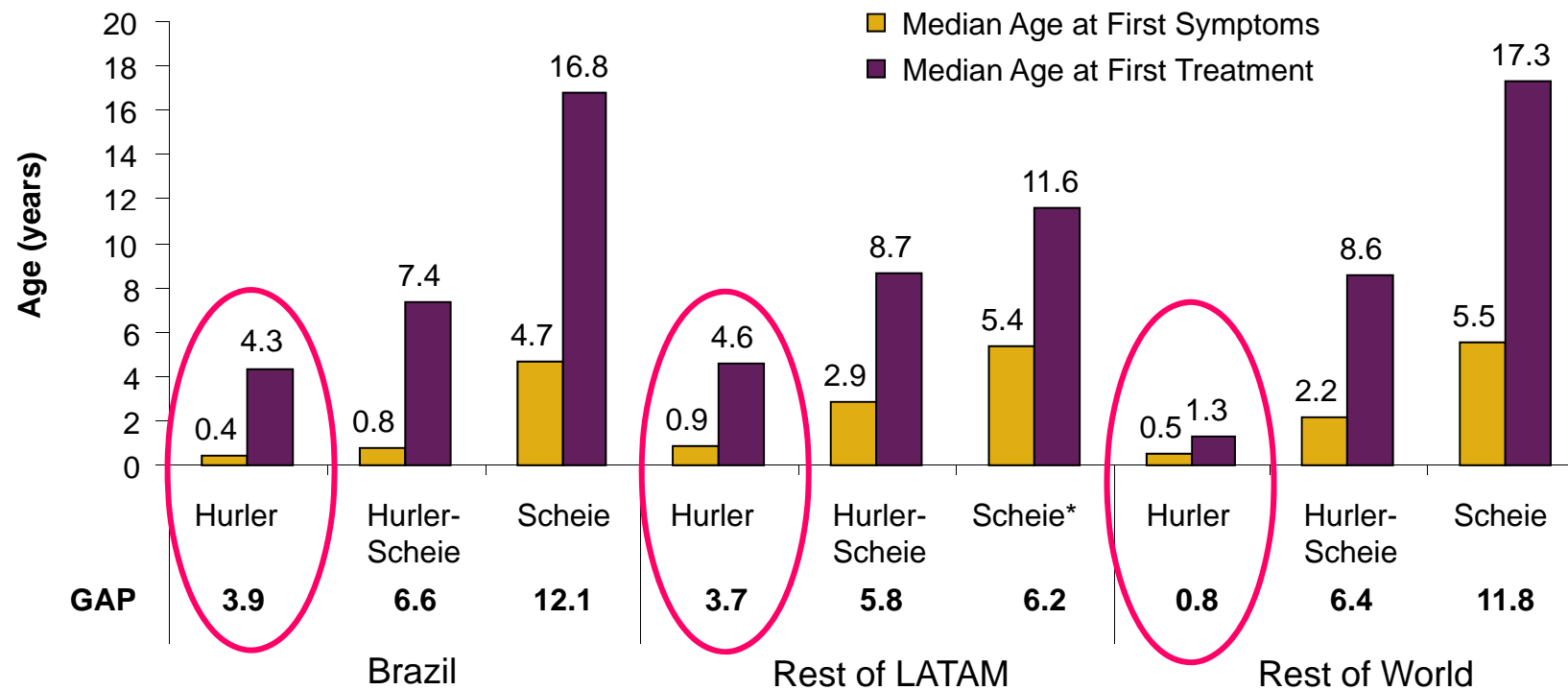


Median Age at Onset of MPS I-Related Symptoms and Diagnosis of MPS I



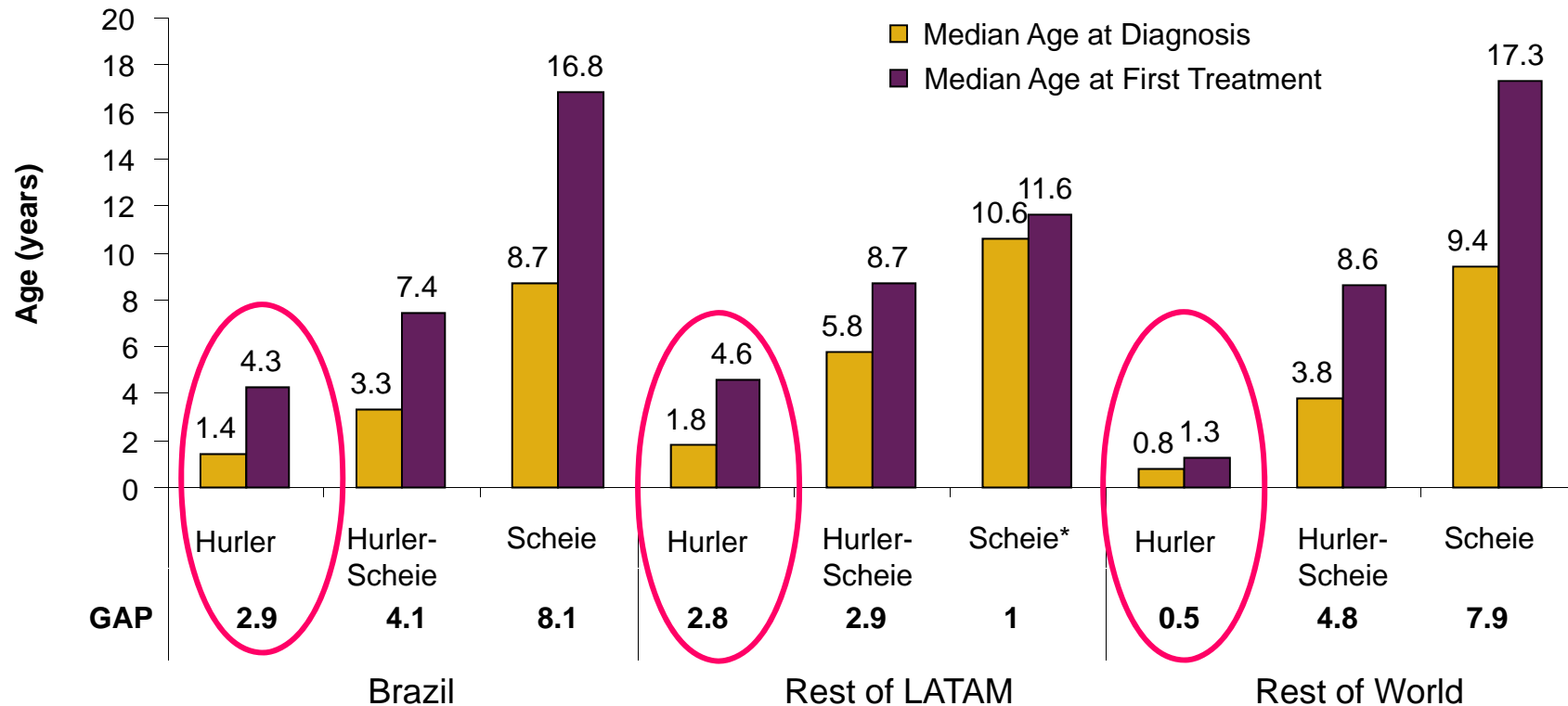
* Only 1 Scheie patient in Rest of LATAM

Median Age at Onset of First MPS I-Related Symptoms & First Disease-Specific Treatment (Laronidase or HSCT)



* Only 1 Scheie patient in Rest of LATAM

Median Age at MPS I Diagnosis and First Disease-Specific Treatment (Laronidase or HSCT)



* Only 1 Scheie patient in Rest of LATAM

Limitations of Analyses

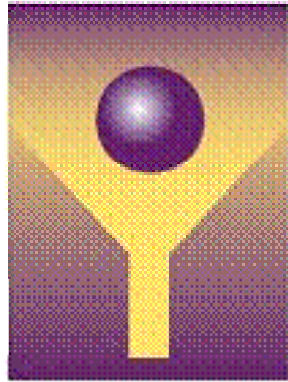
- 25% of LATAM patients overall have an unknown or unreported phenotype. Further analysis should examine age at diagnosis and symptom onset in this cohort to determine the likely phenotype distribution.
- As with all Registry data, there are possible ascertainment biases:
 - Only patients who are under medical care will be enrolled in the Registry.
 - Data are collected and entered voluntarily; not all categories of information are available for all patients.
- Some data analyses contained small numbers of patients (e.g., age at death, among Brazil and rest of LATAM groups).

Summary

- Brazil has the highest proportion of Registry patients from the LATAM region (62%).
- With respect to treatment allocation, only 1 patient in Brazil and rest of LATAM combined (1%) was reported to have had hematopoietic stem cell transplantation (HSCT) versus 42% of patients in ROW.
- The proportion of patients with a reported Hurler phenotype is smaller in Brazil (23 %) and rest of LATAM (44 %) than in ROW (62%).
- Overall, patients in Brazil and rest of LATAM have a longer gap between symptom onset and diagnosis than is seen in ROW.
- Hurler patients in Brazil and Rest of LATAM have a longer median gap between diagnosis and treatment than ROW.

Conclusions

- Despite early signs and symptoms, diagnosis of MPS I is often delayed.
- This delay was more prolonged in LATAM than in ROW for all phenotypes.
- After diagnosis, most patients experience a further delay before beginning treatment.
- These results highlight the need for better disease recognition and access to diagnostic tests, as well better access to and speedier initiation of treatment.



MPS I

REGISTRY
