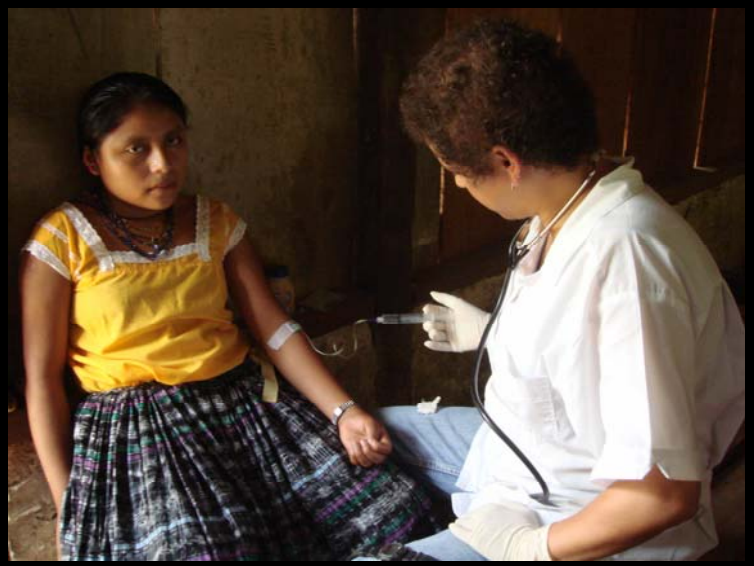

Complexity of Treating New World Cutaneous Leishmaniasis

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Factors causing variation in response to antileishmanial chemotherapy

- *Leishmania* species 
- Clinical factors 
- *Leishmania* intrinsic variability 
- Clinical response to treatment 
- Is there a need of doing specie specific diagnosis for treatment? 

Leishmania species causing NW-CL

***Leishmania* Species**	**Country**
L. (viannia) braziliensis	Central and South America
L. (v) guyanensis	South America
L. (v) panamensis	Nicaragua, Panamá and South America
L. (v) peruviana	Perú and Argentina
L. (v) lainsoni	Bolivia and Brazil
L. mexicana	México, Central and South America
L. amazonensis	South America
L. venezuelensis	Venezuela
L. chagasi	Central and South America

Clinical factors causing variation to antleishmanial chemotherapy

- Clinical forms
  - Single non ulcerated lesion
  - Single ulcerated lesion
  - Multiple lesions
  - DCL
- Lesion localization
  - Joints
  - Ears
- Time of evolution
  - Recent vrs old lesions
- Manipulation (home made remedies)
- Over infections
- Host immune status

Leishmania intrinsic variation

- There is sufficient information supporting the intrinsic differences in *Leishmania* species sensitivity to different antileishmania drugs.
  - Studies using the amastigote-macrophage model
  - Sensitivity of promastigotes and amastigotes in vitro assays
  - Murine macrophage –amastigote model

Sodium Stibogluconate	*L. braziliensis* and *L. donovani* more sensitive than *L. mexicana*, *L. amazonensis* and *L. guyanensis*
Amphothericin B	*L. mexicana* is less sensitive than *L. donovani*
Miltefosine	*L. donovani* more sensitive than *L. braziliensis*, *L. guyanensis* and *L. mexicana*
Paromomycin	*L. major* and *L. tropica* more sensitive than *L. braziliensis* and *L. mexicana*
Azoles	Contradictory information

Clinical response to treatment

Drug	Country / *Leishmania* specie	Cure rate	Reference
Sb^V	Brazil (Rio Janeiro): *L. braziliensis*	84%	Oliveira-Neto, 1993
	Brazil (Bahia): *L. braziliensis*	51%	Romero, 2001
	Guatemala: *L. braziliensis*	90%	Arana, 1994
	Perú: *L. braziliensis*	70%	Arévalo, 2007
	Colombia: *L. braziliensis* *L. panamensis*	67% 93% 81%	Palacios, 2001 Velez, 1997 Soto, 2005
	Ecuador: *L. panamensis (+++)* *L. guyanensis* (+)	91%	Guderian, 1991
	Brazil: *L. guyanensis*	26%	Romero, 2001
	Perú: *L. guyanensis*	92%	Arévalo, 2007

Clinical response to treatment

Drug	Country / *Leishmania* specie	Cure rate	Reference
Miltefosine	Guatemala: *L. braziliensis*	33%	Soto, 2004
	Guatemala: *L. mexicana*	64%	Soto, 2004
	Colombia: *L. panamensis*	91%	Soto, 2004
Ketoconazole	Panamá: *L. panamensis*	76%	Saenz, 1990
	Guatemala: *L. braziliensis*	30%	Navin, 1992
	Guatemala: *L. mexicana*	89%	Navin, 1992
Itraconazole	Colombia: *L. panamensis*	05%	Soto, 1993
	Guatemala: *L. braziliensis*	31%	Arana, UR
	Guatemala: *L. mexicana*	77%	Arana, UR

Clinical response to treatment

Drug	Country / *Leishmania* specie	Cure rate	Reference
Paromomycin	Ecuador: *L. panamensis*	85%	Krause, 1994
	Belize: *L. mexicana and L. braziliensis*	68%	Weinrauch, 1993
	Honduras: *L. chagasi*	1.8%	Neva, 1997
	Guatemala: *L. braziliensis* and *L. mexicana*	91%	Arana, 2001
	Ecuador: *L. panamensis and L. braziliensis*	79%	Armijos, 2004

Difficulties to generalize these results:

- No randomized studies
- Few patients
- Different treatment schemes
- Lack of standardized cure definitions

Do we need to do specie specific diagnosis for treatment?

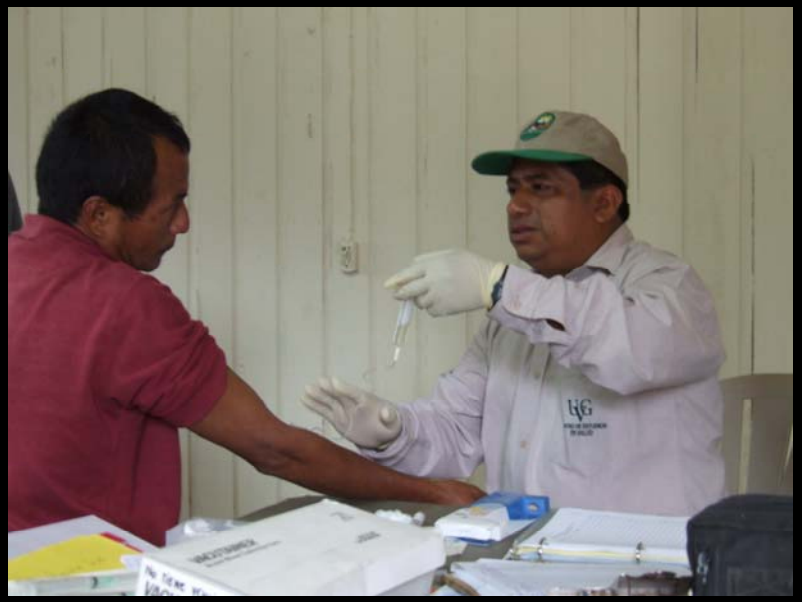
Everyday there is more and more evidence supporting the link between *Leishmania* species and treatment outcome

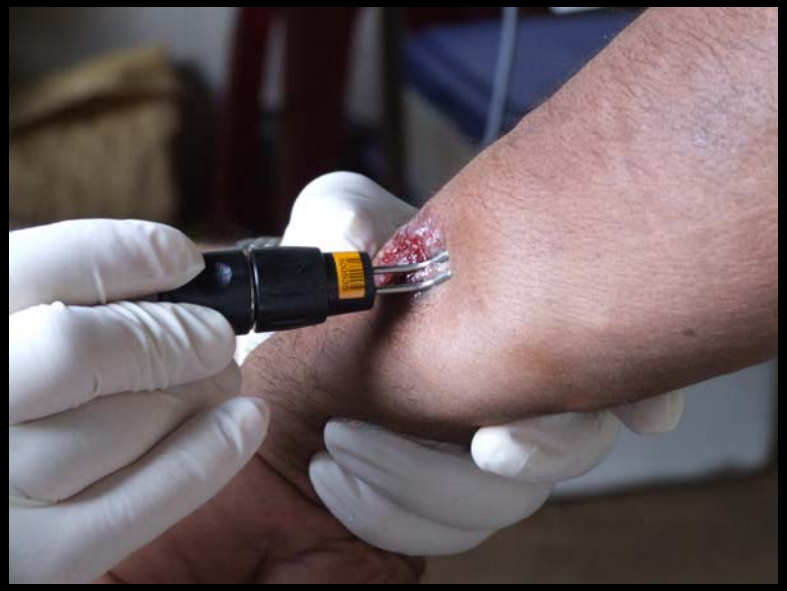
- Ideal vrs reality
  - Difficulties to establish parasitological diagnosis in rural areas (personnel, equipment and costs)
- Research
- Travel medicine

Treatment by species

Species	Drug	Dose
L. mexicana	Local: PMC+MBCl	Twice daily for 20 days
	Ketoconazole	600 mgs PO for 28 day
L. braziliensis	Pentavalent antimonials	20 mgs/kg/day for 20 days
	Local: PMC+MBCl	Twice daily for 20 days
	Local infiltration with anitmonials	~5 ml per infiltration, once or twice weekly
L. panamensis	Pentavalent antimonials	20 mgs/kg/day for 20 days
	Miltefosine	2 mg/Kg/day for 28 days
	Ketoconazole	600 mgs PO for 28 days
L. guyanensis	Pentavalent antimonials	20 mgs/kg/day for 20 days
	Pentamidine isethionate	Four injections, 3 mgs/kg/day every other day
L. donovani	Local infiltration with anitmonials	~5 ml per infiltration, once or twice weekly

Adapted from Blum, J. 2004; 53:158-166





Thank you very much for your attention