








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

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

Clinical factors causing variation to antileishmanial 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	<i>L. braziliensis</i> and <i>L. donovani</i> more sensitive than <i>L. mexicana</i> , <i>L. amazonensis</i> and <i>L. guyanensis</i>
Amphotericin B	<i>L. mexicana</i> is less sensitive than <i>L. donovani</i>
Miltefosine	<i>L. donovani</i> more sensitive than <i>L. braziliensis</i> , <i>L. guyanensis</i> and <i>L. mexicana</i>
Paromomycin	<i>L. major</i> and <i>L. tropica</i> more sensitive than <i>L. braziliensis</i> and <i>L. mexicana</i>
Azoles	Contradictory information



Clinical response to treatment

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

Clinical response to treatment

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

Clinical response to treatment

Drug	Country / <i>Leishmania</i> specie	Cure rate	Reference
Paromomycin	Ecuador: <i>L. panamensis</i>	85%	Krause, 1994
	Belize: <i>L. mexicana</i> and <i>L. braziliensis</i>	68%	Weinrauch, 1993
	Honduras: <i>L. chagasi</i>	1.8%	Neva, 1997
	Guatemala: <i>L. braziliensis</i> and <i>L. mexicana</i>	91%	Arana, 2001
	Ecuador: <i>L. panamensis</i> and <i>L. braziliensis</i>	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
<i>L. mexicana</i>	Local: PMC+MBCI	Twice daily for 20 days
	Ketoconazole	600 mgs PO for 28 day
<i>L. braziliensis</i>	Pentavalent antimonials	20 mgs/kg/day for 20 days
	Local: PMC+MBCI	Twice daily for 20 days
	Local infiltration with antimonials	~5 ml per infiltration, once or twice weekly
<i>L. panamensis</i>	Pentavalent antimonials	20 mgs/kg/day for 20 days
	Miltefosine	2 mg/Kg/day for 28 days
	Ketoconazole	600 mgs PO for 28 days
<i>L. guyanensis</i>	Pentavalent antimonials	20 mgs/kg/day for 20 days
	Pentamidine isethionate	Four injections, 3 mgs/kg/day every other day
<i>L. donovani</i>	Local infiltration with antimonials	~5 ml per infiltration, once or twice weekly



Thank you very much for your attention

