<table>
<thead>
<tr>
<th>Box 1. Recommended treatment regimens for visceral leishmaniasis, ranked by preference</th>
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<tbody>
<tr>
<td><strong>Anthroponotic visceral leishmaniasis caused by L. donovani in Bangladesh, Bhutan, India and Nepal</strong></td>
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<tr>
<td>1. Liposomal amphotericin B: 3–5 mg/kg per daily dose by infusion given over 3–5 days period up to a total dose of 15 mg/kg (A) by infusion or 10 mg/kg as a single dose by infusion (A)</td>
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<tr>
<td>2. Combinations (co-administered) (A)</td>
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<tr>
<td>• liposomal amphotericin B (5 mg/kg by infusion, single dose) plus miltefosine (daily for 7 days, as below)</td>
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<tr>
<td>• liposomal amphotericin B (5 mg/kg by infusion, single dose) plus paromomycin (daily for 10 days, as below)</td>
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<tr>
<td>• miltefosine plus paromomycin, both daily for 10 days, as below</td>
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<tr>
<td>3. Amphotericin B deoxycholate: 0.75–1.0 mg/kg per day by infusion, daily or on alternate days for 15–20 doses (A)</td>
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<tr>
<td>4. Miltefosine: for children aged 2–11 years, 2.5 mg/kg per day; for people aged ≥ 12 years and &lt; 25 kg body weight, 50 mg/day; 25–50 kg body weight, 100 mg/day; &gt; 50 kg body weight, 150 mg/day; orally for 28 days (A)</td>
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<tr>
<td>or Paromomycin: 15 mg (11 mg base) per kg body weight per day intramuscularly for 21 days (A)</td>
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<tr>
<td>5. Pentavalent antimonials: 20 mg Sb⁵⁺/kg per day intramuscularly or intravenously for 30 days in areas where they remain effective: Bangladesh, Nepal and the Indian states of Jharkhand, West Bengal and Uttar Pradesh (A)</td>
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<tr>
<td><strong>Rescue treatment</strong> in case of non-response: conventional amphotericin B deoxycholate infusions or liposomal amphotericin B at higher doses</td>
</tr>
<tr>
<td><strong>Visceral leishmaniasis caused by L. donovani in East Africa (Ethiopia, Eritrea, Kenya, Somalia, Sudan and Uganda) and Yemen</strong></td>
</tr>
<tr>
<td>1. Combination: pentavalent antimonials (20 mg Sb⁵⁺/kg per day intramuscularly or intravenously) plus paromomycin (15 mg [11 mg base] per kg body weight per day intramuscularly) for 17 days (A)</td>
</tr>
<tr>
<td>2. Pentavalent antimonials: 20 mg Sb⁵⁺/kg per day intramuscularly or intravenously for 30 days (A)</td>
</tr>
<tr>
<td>3. Liposomal amphotericin B: 3–5 mg/kg per daily dose by infusion given over 6–10 days up to a total dose of 30 mg/kg (B)</td>
</tr>
<tr>
<td>4. Amphotericin B deoxycholate: 0.75–1 mg/kg per day by infusion, daily or on alternate days, for 15–20 doses (A)</td>
</tr>
<tr>
<td>5. Miltefosine orally for 28 days at dosage as above (A)</td>
</tr>
</tbody>
</table>
### Post-kala-azar dermal leishmaniasis

**East Africa**

1. Pentavalent antimonials: 20 mg Sb\textsuperscript{5+}/kg per day intramuscularly or intravenously for 30–60 days, when indicated (C)

2. Liposomal amphotericin B: 2.5 mg/kg per day by infusion for 20 days, when indicated (C)

**Bangladesh, India, Nepal**

1. Amphotericin B deoxycholate: 1 mg/kg per day by infusion, up to 60–80 doses over 4 months (C)

2. Miltefosine orally for 12 weeks at dosage as above (A)

### Visceral leishmaniasis caused by L. infantum: Mediterranean Basin, Middle East, Central Asia, South America

1. Liposomal amphotericin B: 3–5 mg/kg per daily dose by infusion given over a 3–6 days period, up to a total dose of 18–21 mg/kg (B)

2. Pentavalent antimonials: 20 mg Sb\textsuperscript{5+}/kg per day intramuscularly or intravenously for 28 days (B)

3. Amphotericin B deoxycholate: 0.75–1.0 mg/kg per day by infusion, daily or on alternate days for 20–30 doses, for a total dose of 2–3 g (C)
Box 2. Recommended treatment regimens for Old World cutaneous leishmaniasis (not ranked by preference)

No antileishmanial treatment (see text)

**Local therapy**

*L. major*

- 15% paromomycin/12% methylbenzethonium chloride ointment twice daily for 20 days (A)
- Intralional antimonials, 1–5 ml per session plus cryotherapy (liquid nitrogen: –195 °C), both every 3–7 days (1–5 sessions) (A)
- thermotherapy, 1–2 sessions with localized heat (50 °C for 30 s) (A)
- Intralional antimonials or cryotherapy independently, as above (D)

*L. tropica*, *L. aethiopica* and *L. infantum*

- 15% paromomycin/12% methylbenzethonium chloride ointment, as above (D)
- Intralional antimonials plus cryotherapy, as above (D)
- thermotherapy, as above (A)
- Intralional antimonials, alone, as above (B)
- cryotherapy, alone, as above (C)

**Systemic therapy**

*L. major*

- fluconazole, 200 mg oral daily for 6 weeks (A)
- pentavalent antimonials, 20 mg Sb\(^{5+}\)/kg per day intramuscularly or intravenously for 10–20 days (D)
- pentavalent antimonials, 20 mg Sb\(^{5+}\)/kg per day intramuscularly or intravenously plus pentoxyfylline, 400 mg three times a day for 10–20 days (A)

*L. tropica* and *L. infantum* 

- pentavalent antimonials, 20 mg Sb\(^{5+}\)/kg per day intramuscularly or intravenously for 10–20 days (D)
- pentavalent antimonials, 15–20 mg Sb\(^{5+}\)/kg per day intramuscularly or intravenously for 15 days plus oral allopurinol 20 mg/kg for 30 days, to treat leishmaniasis recidivans caused by *L. tropica* (C)

*L. aethiopica*

- pentavalent antimonials 20 mg Sb\(^{5+}\)/kg per day intramuscularly or intravenously plus paromomycin, 15 mg (11 mg base)/kg per day intramuscularly for 60 days or longer to treat diffuse cutaneous leishmaniasis (C)

* Few data are available on therapy for cutaneous leishmaniasis due to *L. infantum* and *L. aethiopica.*
Box 3. Recommended treatment regimens for New World cutaneous leishmaniasis (not ranked by preference)

**No anti-leishmanial treatment** (see text)

**Local therapy, all species**
- 15% paromomycin and 12% methylbenzethonium chloride ointment twice daily for 20 days (B)
- thermotherapy: 1–3 sessions with localized heat (50 °C for 30 s) (A)
- intralesional antimonials: 1–5 ml per session every 3–7 days (1–5 infiltrations) (B)

**Systemic**

*L. mexicana*
- ketoconazole: adult dose, 600 mg oral daily for 28 days (B)
- miltefosine: 2.5 mg/kg per day orally for 28 days (B)

*L. guyanensis* and *L. panamensis*
- pentamidine isethionate, intramuscular injections or brief infusions of 4 mg salt/kg per dose every other day for 3 doses (C)*
- pentavalent antimonials: 20 mg Sb5+/kg per day intramuscularly or intravenously for 20 days (C)*
- miltefosine: 2.5 mg/kg per day orally for 28 days (B)

*L. braziliensis*
- pentavalent antimonials: 20 mg Sb5+/kg per day intramuscularly or intravenously for 20 days (A)
- amphotericin B deoxycholate: 0.7 mg/kg per day, by infusion, for 25–30 doses (C)
- liposomal amphotericin B: 2–3 mg/kg per day, by infusion, up to 20–40 mg/kg total dose (C)

*L. amazonensis, L. peruviana* and *L. venezuelensis*
- pentavalent antimonials: 20 mg Sb5+/kg per day intramuscularly or intravenously for 20 days

**Relapse treatment:**
- amphotericin B deoxycholate, as above
- pentavalent antimonials: as above plus topical imiquimod every other day for 20 days (A)
- liposomal amphotericin B: 3 mg/kg per day, by infusion, up to 20–40 mg/kg total dose may be considered

* The efficacy of pentamidine, and pentavalent antimonials is depends on the geographical area (see text).
Box 4. Recommended treatment regimens for mucocutaneous leishmaniasis (not ranked by preference)

All species*

- pentavalent antimonials: 20 mg/kg per day intramuscularly or intravenously for 30 days (C)
- pentavalent antimonials: as above plus oral pentoxifylline at 400 mg/8 h for 30 days (A)
- amphotericin B deoxycholate: 0.7–1 mg/kg by infusion every other day up to 25–45 doses (C)
- liposomal amphotericin B: 2–3 mg/kg daily by infusion up to a total dose of 40–60 mg/kg (C)
- in Bolivia: miltefosine at 2.5–3.3 mg/kg per day orally for 28 days (B)

* Little data are available for the therapy of MCL due to *L. aethiopica*