Results. In total, 15 cases of Ehrlichiosis (E, mean age: 72.1 ± 12.6) and 11 cases of Anaplasmosis (A, mean age: 63.8 ± 13.5) were compared. Clinical presentation was similar with the two most common symptoms: fever (E 86.7%, A 90.9%) and fatigue (E 80.0%, A 72.7%). Average length of stay for hospitalized patients was 3.07 (E) and 2.91 (A, $P = .58$) days, respectively. Leukopenia (E 93.3%, A 63.6%; P =0.06), thrombocytopenia (E 100%, A 81.8%; P =0.09), AKI (E 53.3%, A 18.2%; P =0.07), and transaminitis (E 46.7%, A 27.3%; P =0.32) was more common for Ehrlichiosis. Severe cases were observed significantly more with Ehrlichiosis than Anaplasmosis (E 73.3% vs. A 27.3%, $P = 0.02$).

Conclusion. Ehrlichiosis and Anaplasmosis had similar clinical presentations while laboratory data was more severe for Ehrlichiosis in cases from an endemic area in the Northeast of the United States.

Disclosures. **All authors:** No reported disclosures.

299. Microbiome Manipulation: Antibiotic Effects on Cutaneous Leishmaniasis Presentation and Healing

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Background. Cutaneous ulcers of leishmanial infection are chronic wounds with an anaerobe-predominant microbiome, further impacted by the immunomodulatory effects of *Leishmania* and superinfecting bacteria. Leveraging a policy to give presumptive pyoderma treatment prior to evaluation for leishmaniasis, we assessed the effect of antibiotic therapy upon clinical presentation or treatment outcome among those with cutaneous leishmaniasis.

Methods. Data were obtained from a 418-patient open label study of 10 or 20 days of sodium stibogluconate (SSG) therapy conducted at Walter Reed Army Medical Center. Subjects with parasitologically confirmed leishmaniasis were included if this was their first treatment course. We assessed clinical presentation by number and aggregate size of lesions, appearance, and lymphatic involvement. Treatment outcome was evaluated by patient report of healing at 2, 6, and 12 months post SSG. We divided subjects into those with and without prior antibiotic treatment for analysis of clinical presentation and further subdivided the antibiotic group (outcome analysis) into those receiving antibiotics during or prior to SSG. We performed two-group comparisons of clinical presentation with Mann–Whitney and Fisher's Exact tests and three-group comparisons of SSG treatment outcomes with Kruskal–Wallis and χ^2 tests.

Results. The cohort was 360 mainly young white males, with median four lesions in both groups. Most commonly used antibiotics were doxycycline ($n = 29$ courses), cephalexin (33), and amoxicillin-clavulanate (127). Of those interviewed, prior antibiotic-treated patients had greater heal rates (49/58 vs. 50/74) at 2 months follow-up ($P = 0.03$). Further analysis found no significant differences between the groups in clinical severity at presentation or in consolidated 6–12 month treatment outcomes (167/195 antibiotic, 139/165 no antibiotic, $P = 0.77$).

Conclusion. Systemic antibiotics given prior to, but not during SSG therapy, may modestly hasten healing of leishmanial skin lesions. This observation was not associated with any specific antibiotic (e.g., better anaerobic spectrum). No antibiotic effect on number or size of lesions at presentation for treatment or upon long-term (6–12 months) lesion healing outcome was seen.

Disclosures. **N. Aronson**, UpToDate: Consultant, Licensing agreement or royalty. Elsevier: Editor and Author, Licensing agreement or royalty

300. Clinical Evaluation of Latent Visceral Leishmaniasis in US Service Members Deployed to Operation Iraqi Freedom

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Background. Visceral leishmaniasis (VL) is a systemic vector-borne disease. In Iraq, VL is caused by *Leishmania infantum,* an intracellular parasite requiring a cell-mediated immune response. Most infections are asymptomatic, and evidence exists for latent disease that may activate, especially with immunosuppression. Since 2001, 22 cases of active VL have occurred among deployed service members and there is potential that many are latently infected.

Methods. A recent surveillance study tested 112 asymptomatic US service members previously deployed to Iraq for latent VL with interferon gamma release assays (IGRA), enzyme-linked immunosorbent assays (ELISA), rK39 immunochromatographic tests, and quantitative polymerase chain reactions (PCR). Persons with any positive result were offered a clinical consultation to assess for exposure risks, immune-suppressing conditions, and evidence of active VL, as well as to obtain baseline laboratory studies and abdominal imaging, as needed, and to provide counseling. This is a case series of the 18 subjects who underwent clinical evaluation.

Results. Among 18 latent VL subjects evaluated, 14 were IGRA+, 4 ELISA+, 0 rK39+, and 1 PCR+ (3 parasites/ml). All were male and median age was 38.5 years. Initial deployments were in 2003–2008 and median total duration in Iraq was 17 months. Musculoskeletal disease was the most common comorbidity. Four subjects previously had cutaneous leishmaniasis. One subject had psoriatic arthritis and prior TNF-α inhibitor exposure, but no other substantial risks for immunosuppression were identified. There was no evidence of active VL, although one subject had thrombocytopenia and two had elevated liver enzymes. There was no abnormal imaging. No subjects were treated and those that were PCR+ and ELISA+ are being followed clinically.

Conclusion. This series highlights the first 18 US service members diagnosed with latent VL. No patients have active disease, most have an appropriate immune response (IGRA), four have a T_H2 humoral immune response (one of whom is immunosuppressed), and one has evidence of ineffective immune control with circulating parasites. We have developed an approach to the assessment and counseling of latent VL. Further studies are needed to assess the natural history and treatment of latent VL.

Disclosures. **N. E. Aronson**, UpToDate: Chapter Author for several leishmaniasis chapters, Licensing agreement or royalty. Elsevier: Associate editor for Hunter's Tropical Medicine and Emerging Infectious Diseases, Licensing agreement or royalty

301. A Stealth Parasite: Prevalence and Characteristics of Risks for Latent Visceral Leishmaniasis in a Cohort of US Soldiers Deployed to Operation Iraqi Freedom

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Background. Leishmaniasis is a zoonotic parasitic disease transmitted by sand fly bites. Visceral leishmaniasis (VL) is a chronic intracellular infection which, when symptomatic, can be fatal without therapy. Subclinical or latent VL may occur in a majority of those infected with lifelong risk of activation when immunosuppressed. Symptomatic VL has been described in Soldiers deployed to Operation Iraqi Freedom (OIF). We report the prevalence and risk characteristics of latent VL infection in OIF Soldiers.

Methods. Healthy soldiers deployed during summer months (2002–2011) to VL endemic areas of Iraq were recruited from Fort Bliss, Texas. Responses to a risk factor survey and blood samples were obtained. *Leishmania* research diagnostics were performed on serum and/or white blood cells to include ELISA, rk39 immunochromatography, qPCR, and interferon gamma release (IGRA) assays. Analyses included descriptive percentages and other summary statistics. Fisher's exact test and logistic regression were used for group comparisons.

Results. Out of 88 subjects enrolled, 76/88 (86%) were male with median age 39 years and deployment duration of 365 days. The prevalence of latent VL was 10.2% (CI 4.8%-18.5%) with seven IGRA positive and two ELISA positive. Travel to Ninewa governate correlated with VL, $P < 0.05$. No significant differences were noted in occupation, personal protective measures, deployment timeframe, or sleeping conditions between VL positive and negative individuals. In persons with latent VL, 4/9 (44.4%) and 6/9 (66.7%) deployed to Ninewa and Baghdad respectively, 7/9 (77.8%) were outdoors most nights, 5/9 (55.6%) slept on the ground during deployment, 5/9 (55.6%) were medical personnel, 7/9 (77.8%) slept in less than full uniform, and 8/9 (88.9%) never or rarely used insect repellent.

Conclusion. Latent VL was identified in asymptomatic OIF Soldiers (10.2%). Travel to Ninewa governate correlated with VL infection. In the latent VL group, many were healthcare workers, slept on the ground or in less than full uniform, and rarely used insect repellent. Further studies are needed to inform risk of reactivation disease in latently infected US Soldiers and to target measures for broader surveillance and safety, such as the screening of military blood donors.

Disclosures. **All authors:** No reported disclosures.

302. Imported Malaria in Travelers Presenting to a Tertiary Urban Hospital, 2000–2016

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Background. Due to increasing global travel and evolving epidemiologic factors, the number of incident cases of malaria imported into the United States has been growing in recent years.

Methods. We conducted a retrospective review of 90 cases of malaria seen at a single urban university hospital during 2000–2016.

Results. Of the 90 cases, 77% were *Plasmodium falciparum*, 14% were either *P. ovale* or *P. vivax*, 1% was *P. malariae*, and the rest were mixed or unknown. Eighty-one patients had traveled to Africa, four to Asia, four to more than one continent, and one to Haiti. Mean age was 41, and 59% were male. The main presenting symptoms were fever (92%), chills (78%), and headache (66%); 10% presented with cerebral malaria. Thirteen cases were managed as outpatients, 59 on a medical ward, and 18 in the ICU. Fourteen (16%) had severe malaria; these were more likely to present with hypotension, non-segmented neutrophilia, hyponatremia, metabolic acidosis, and acute kidney injury (all $P < 0.01$). Thrombocytopenia was more severe in patients with severe malaria (54,000 vs. 113,000, $P < 0.01$). Treatment included quinine-based therapy (38%), atovaquone/proguanil (31%), artemether/lumefantrine (19%), and chloroquine/primaquine (11%). Twenty (22%) required change of treatment regimen due to inadequate clinical response or adverse effects. The most common in-hospital complications were ARDS (8%), QT

prolongation (7%), and nosocomial infection (4%). Two patients were pregnant at the time of presentation; one suffered severe malaria and fetal loss. Only 3% of patients reported being prescribed a prophylactic regimen and completing it; 20% reported taking an incomplete course, and the majority took no prophylaxis at all. Of 27 patients who had presented to another United States-based medical provider prior to hospitalization, 11 were initially misdiagnosed and treated for conditions other than malaria, including two who underwent extensive hematologic investigations. Inadequate experience and resources in treating malaria were the primary reasons cited for transfer to the tertiary hospital from community-based providers.

Conclusion. Malaria poses a substantial health risk to US travelers, particularly in light of under-utilization of prophylaxis, lack of familiarity with the disease by local providers, and delays to diagnosis.

Disclosures. **All authors:** No reported disclosures.

303. Cotrimoxazole Prophylaxis Associated With Reduced Anemia Hazard in HIV-Exposed Infants in a Malaria-Endemic Setting

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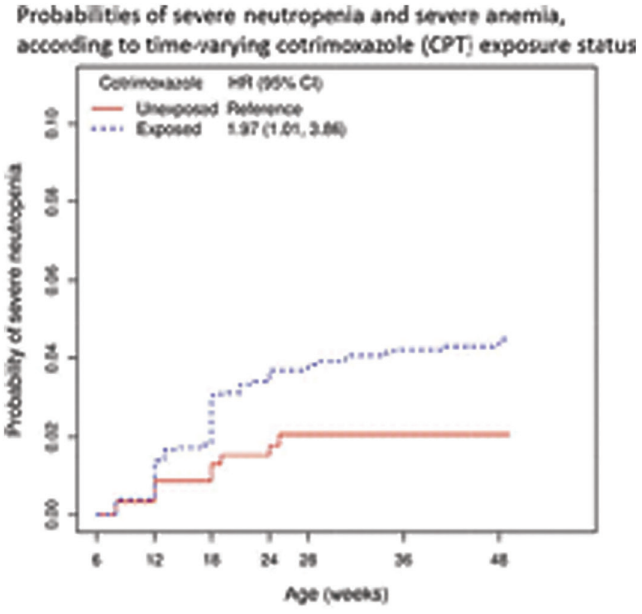
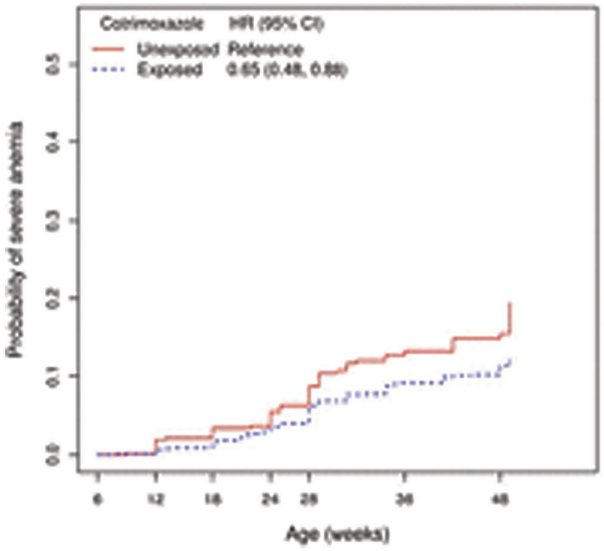
Background. In settings where pneumonia, diarrhea, and malnutrition are significant causes of infant mortality, breastfeeding for 12 months combined with antiretroviral and cotrimoxazole preventive therapy (CPT) offers infants of HIV-infected mothers the greatest chance for HIV-free survival. Both maternal and infant antiretroviral (ARV) prophylaxis and CPT have been independently associated with reports of neutropenia and anemia, so it is important to evaluate the impact of their concurrent use.

Methods. We used data from the breastfeeding, antiretrovirals, and nutrition study (conducted 2004–2010) to evaluate the impact of CPT and ARV treatment on hematologic outcomes from 6 to 48 weeks of age for 2,006 HIV-exposed, uninfected infants in Lilongwe, Malawi. Using Cox proportional hazards models, we compared the hazard of severe (grade 3 and higher) anemia and neutropenia (as defined by the NIAID Division of AIDS, 2014) according to time-varying CPT, implemented midway through the study, and antiretroviral treatment arm exposure (maternal zidovudine/lamivudine/lopinavir-ritonavir, daily infant nevirapine, or none during 6 months of breastfeeding) and checked for statistical interaction between the two.

Results. CPT was associated with an increase in severe neutropenia (hazard ratio [95% CI]: 1.97 [1.01, 3.86]) (Figure 1a) and a decrease in severe anemia hazard (HR: 0.65 [0.48, 0.88]) (Figure 1b). The hazard of severe anemia is significantly lower in the infant nevirapine arm compared with the control arm (HR: 0.68 [0.48, 0.96]). The interaction between CPT and ARV treatment arm was not significant for either severe neutropenia ($P = 0.22$) or severe anemia ($P = 0.32$).

Conclusion. In addition to an expected association with increased hazard of severe neutropenia, CPT was associated with a reduced hazard of severe anemia, possibly due to the drug's antimalarial effect. This provides further support for CPT use in HIV-exposed, uninfected infants in malaria-endemic resource-limited settings.





Disclosures. **All Author:** No reported disclosures.

304. Preventing Polio Post-eradication: Revertant Proportion Patterns of OPV Serotypes

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Background. As wild poliovirus is eradicated and countries switch from oral polio vaccine (OPV) to inactivated polio vaccine (IPV), preventing circulating vaccine-derived poliovirus is a top priority. However, the stability of Sabin vaccine serotypes remains a concern in undervaccinated communities. We sought to measure the canonical point mutation rates associated with OPV serotype neuroreversion and vaccine-associated paralytic polio (VAPP) as possible markers of serotype fitness. Mexico provides a natural environment to study these patterns as it provides routine IPV immunization and bi-annual OPV campaigns.

Methods. We enrolled 450 households with children eligible for OPV before the February 2015 national immunization week from three communities near Orizaba, Mexico. In each community, a different proportion of eligible children received OPV (10, 30, and 70%). Transmission was measured by PCR detection of OPV in samples collected serially from vaccinated children, their households, and other families in the community. Positive samples were reanalyzed to quantify revertant proportion (RP), the percent of OPV VAPP mutants found in positive samples.

Results. 15,109 samples were collected and analyzed from 1,828 participants. 554 (3.7%) were OPV positive, and 194 have been reanalyzed for RP to date.

The majority of OPV 1 positive samples showed <25% revertance as late as 71 days post-vaccination (Figure 1). By contrast, OPV 2 and OPV 3 positive samples quickly revert to VAPP OPV. The majority of OPV 2 positive samples were >75% revertant by Day 7 (Figure 2), while the majority of OPV 3 positive samples were >75% revertant by Day 4 (Figure 3).

Conclusion. OPV 1 appears to be more stable than OPV 2 and OPV 3, remaining <25% revertant 71 days post-vaccination. OPV 2 reverts quickly, with most samples reverting to VAPP by Day 7, while OPV 3 reverts the fastest, with most samples reverting to VAPP by Day 4. Understanding the stability of OPV and VAPP mutants may shed some light on the ability of OPV serotypes to persist in community circulation. Analyses regarding potential covariates for VAPP and RP are currently underway.