735. Malaria Chemoprophylaxis Adherence Among U.S. Active Duty Service Members During Deployment to Endemic Regions

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Session: P-35. Global Health

Background. Malaria is a serious disease with an expanding known incidence and geographical range in the US. The infection is caused by Babesia microti in the US and is transmitted by the bite of Ixodes ticks, and occasionally by blood transfusion. The diagnosis is usually established by microscopic examination of a stained blood smear to see intraerythrocytic parasites. The level of parasitemia is only loosely correlated with clinical severity. Ancillary reports suggest that HLD cholesterol levels decline during acute Babesia. In this study, we report cholesterol levels in a series of patients with acute Babesia with the hypothesis that HLD levels may be a potential biomarker for more severe infections.

Methods. A retrospective chart review was performed at Stony Brook University Hospital and Stony Brook Southampton Hospital between 2013 and 2018. Inclusion criteria was defined as a case of acute Babesia infection proven by peripheral blood smear microscopy and who had a lipid profile drawn during presentation to the emergency department. Cholesterol levels that were measured either before or after the infection (at least 1 month apart) were also recorded to compare to the levels reported during acute infection.

Results. A total of 40 patients (27.5% female) met criteria for acute Babesia infection. Fifteen (37.5%) had a history of splenectomy. The patients were divided into two groups for comparisons based on the treating physician’s clinical decision: 32 patients who were admitted to the hospital and 8 patients who were not admitted. History of hypertension was more common in admitted than non-admitted patients (37% vs. 17%, Chi-square test p=0.02); the median levels of LDL and HDL were more reduced in admitted than non-admitted patients (46 vs 76 mg/dL, p=0.04 and 9 vs 28.5 mg/dL, p=0.03, based on t-test respectively).

Conclusion. LDL and HLD levels are significantly reduced in acute Babesia, and LDL levels are inversely proportional to the parasitemia, suggesting that low levels of LDL may predict worsening disease in Babesia. The mechanism of this phenomenon is unknown. Further prospective studies are needed.

Disclosures. All Authors: No reported disclosures
Box plot demonstrating that patients were waiting longer post symptom onset to access care in the Emergency Department. 3 patients had covid swabs in the community and 10 accessed care through their primary care physician.

Conclusion. Our data show that malaria is being considered early in the emergency department however there remain significant delays in administration of treatment. In 6 cases where malaria was not considered early there were delays in diagnosis of up to 5 days. An audit cycle will be completed with the aim of reducing door to antimarial time.

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737. Geographic Clustering of Travel-acquired Infections in Ontario, Canada, 2008-2020
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Background. As rates of international travel increase, more individuals are at risk of travel-acquired infections (TAIs). We aimed to review all microbiologically confirmed cases of malaria, dengue, chikungunya, and enteric fever (Salmonella enterica serovar Typhi/Paratyphi) in Ontario, Canada between 2008-2020 to identify high-resolution geographical clusters that could be targeted for pre-travel prevention.

Methods. Retrospective cohort study of over 174,000 unique tests for the four above-mentioned diseases from Public Health Ontario Laboratories. Test-level data were processed to calculate annual case counts and crude population-standardized incidence ratios (SIRs) at the forward sortation area (FSA) level. Moran’s I statistic was used to test for global spatial autocorrelation. Smoothed SIRs and 95% posterior credible intervals (CIs) were estimated using a spatial Bayesian hierarchical model, which accounts for statistical instability and uncertainty in small-area incidence. Posterior CIs were used to identify high- and low-risk areas, which were described using sociodemographic data from the 2016 Census. Finally, a second model was used to estimate the association between drivetime to the nearest travel clinic and risk of TAI within high-risk areas.

Results. There were 5962 cases of the four TAIs across Ontario over the study period. Smoothed FSA-level SIRs are shown in Figure 1a, with an inset for the Greater Toronto Area (GTA) in 1b. There was spatial clustering of TAIs (Moran’s I = 0.61, p < 2.2e-16). Identified high- and low-risk areas are shown in panels c and d. Compared to low-risk areas, high-risk areas were significantly more likely to have higher proportions of immigrants (p < 0.0001), lower household after-tax income (p = 0.04), more university education (p < 0.0001), and were less knowledgeable of English/French (p < 0.0001). In the high-risk GTA, each minute increase in drivetime to the closest travel clinic was associated with a 4% reduction in TAI risk (95% CI 2 - 6%).

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736. Delays in Malaria Recognition and Door to Anti-malarial Time in a South London Hospital
Nisha Patel, MBBS Rs (Hons) MRCP DTM&H 1; Tomasz Materski, Lekary 1; Elisa Gonzalez, MD 1; Solomon Russom, MBA in Accounting and Finance 1; Gurjinder Sandhu, MBE FRCP DTM&H PhD 1; Kings College Hospital, London, UK

Session: P-35. Global Health

Background. The prompt recognition and treatment of Plasmodium falciparum is necessary to prevent death. We reviewed data from a cohort of patients presenting with malaria to Kings College Hospital NHS Trust, London.

Methods. Retrospective review of electronic records and drug charts of patients diagnosed with malaria from Jan 2019- March 2021.

Results. 109 cases of malaria were identified representing travellers from 11 Sub-Saharan African countries: Nigeria(38%), Sierra Leone(33%), Ivory Coast(10%). The age range varied from 4 to 76 years with a mean of 44, 66% of the cohort was male. 22 cases occurred during the COVID-19 Pandemic. The commonest symptoms were Fever (97%), Headache (92%) and malaise (72%). P. falciparum was present in 99% of cases.

Conclusion. Short-duration travel, travel to highly endemic regions, and mosquito-avoidance behaviors were associated with increased adherence to prophylaxis. The lower rate of adherence in post-deployment enrollees may be a surrogate for inadquate counseling or recall bias. Our study highlights potential holes in counseling regarding malaria prophylaxis and the importance of ongoing provider and patient education on malaria.

Disclosures. Heather Yun, MD, American Board of Internal Medicine (Individual(s) Involved: Self); Board Member

Table 1. Odds of full adherence to malaria chemoprophylaxis on multivariate logistic analysis

| Risk Factor                        | Odds Ratio (95% CI) | P Value |
|------------------------------------|---------------------|---------|
| Enrolment post-deployment          | 0.4 (0.50-0.99)     | <0.01   |
| Age years (continuous)             | 1.01 (0.96-1.03)    | 0.12    |
| Travel duration - 14 days          | 9.1 (2.3-25.6)      | <0.01   |
| Shipboard accommodations           | 1.7 (0.52-5.8)      | 0.00    |
| Donors-barrels accommodations      | 0.8 (0.51-1.1)      | 0.16    |
| Tent accommodations                | 0.7 (0.50-0.9)      | 0.04    |
| Did not stay overnight at destination| 1.7 (0.57-5.8)    | 0.08    |
| Travel to Africa                   | 3.2 (2.3-5.4)       | <0.01   |
| Travel to South, Central, and West Asia| 0.6 (0.41-1.1)   | 0.12    |
| Use of insect repellent on skin    | 1.4 (1.06-9.5)      | 0.04    |
| Often/everyday application of repellent to skin| 1.8 (1.25-5.5) | <0.01   |
| Trust osteo clothing separately with repellent | 1.2 (0.51-3.7) | 0.31    |
| Percentage of nights using mosquito net| 1.5 (0.30-2.2) | <0.01   |

Not recommended to use mosquito net | 1.0 (0.33-3.6) |

25-50%                                | 1.6 (1.03-2.8) |

51-75%                                | 1.0 (0.62-2.0) |

>75%                                   | 2.2 (1.43-3.3) |

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