

## ORAL ABSTRACTS

**1789. Multi-parallel quantitative real-time PCR surveillance of gastrointestinal parasites in a symptomatic rural Argentinian population: initial results of the Latin American Multicenter Parasite Study (LAMPS)**

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**Background.** There are over 2 billion people infected with gastrointestinal (GI) parasites. Diagnosis of GI parasites relies on stool microscopy that has low diagnostic sensitivity and specificity. To better understand the parasitic etiology of abdominal symptoms, we implemented our rapid, high throughput, multi-parallel quantitative real-time PCR (qPCR) for the 8 common GI parasites including the helminths, *Ascaris*

*lumbricoides* (Al), *Ancylostoma duodenale* (Ad), *Necator americanus* (Na), *Strongyloides stercoralis* (Ss), *Trichuris trichiura* (Tt) and protozoa, *Cryptosporidium parvum* (Cp), *Entamoeba histolytica* (Eh) and *Giardia lamblia* (Gl).

**Methods.** This assay was used to analyze stool samples collected from 99 patients with abdominal symptoms seen in a rural Argentina clinic. qPCR was compared to the semi-quantitative McMaster's microscopy technique.

**Results.** For Al, qPCR identified (56.6%) positives whereas McMaster's microscopy technique identified (47.5%) with 91.3% sensitivity and 90.5% negative predictive value (NPV). For hookworm, there was 37.4% detected by qPCR compared to 22.2% by microscopy ( $p < 0.05$ ), with a 95.5% sensitivity and 98.4% NPV. Hookworm ova are indistinguishable by microscopy, but qPCR is species specific. While Na was the predominate hookworm detected, Ad DNA was detected in higher concentrations (0.61 versus 119.6 fg/ $\mu$ L,  $p < 0.0001$ ). This has important implications, since Ad is more aggressive in causing anemia. The difference between qPCR and microscopy was dramatically seen for Gl (63.6% versus 8.1%) with 55 additional positives for Gl ( $p = 0.001$ ). For Ss, qPCR identified (21.2%) positives whereas microscopy identified (3.0%) ( $p < 0.05$ ) with 100% sensitivity and NPV. qPCR was also able to detect polyparasitism by a factor of 7 compared to microscopy ( $p < 0.05$ ).

**Conclusion.** We have deployed a quantitative molecular based system that has improved diagnostic accuracy than stool microscopy. This is the first use of multi-parallel qPCR in Argentina and has shown the prevalence of GI parasite infections in symptomatic patients. It is one site of our Latin American Multicenter Parasite Study (LAMPS). The results will help refine treatment options on a public health scale and lead to better health outcomes in endemic settings.

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