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Filarial antigen detection assays may serve as a useful adjunct to blood exams for community-based surveys, in terms of both the diagnostic and epidemiologic information provided. In this study, the Og4C3 antigen detection assay was used to analyze the distribution of *Wuchereria bancrofti* antigenemia in a Haitian population. Nocturnal blood surveys were performed in the community of Belloc; a 20 µl blood film was prepared and 100 µl of blood was collected as a source of serum for the antigen detection assay. Of 247 people surveyed to date (age 1 - 75 yrs), 74 (30%) were microfilaremic (MF+). Using 15 µl of serum diluted 1:10 for the assay, all of the MF+ individuals were antigen positive (Ag+). Parallel studies indicated that assay sensitivity was maintained using serum obtained from daytime bleedings. The prevalence of antigenemia in MF- residents was 27.7%. The overall antigenemia of 49.4% contrasted with that of a neighboring community located 1 km away where the prevalence of microfilaremia and antigenemia were 6.2% and 23.7%, respectively. Consistent with our previous observations in clinic-based populations, antigenemia in persons with elephantiasis was significantly lower (10%) than in other MF- individuals. The age-specific prevalence of antigenemia increased from 36.8% in the 0-4 yr age group to 77.8% in those 50 yr and older. The distribution of circulating antigen levels showed no evidence for a decrease with age. If confirmed in further surveys, these results may carry significant implications about the relationships between infection, immunity, and disease.

456 *WUCHERERIA BANCROFTI* PCR FOR THE DETECTION OF INFECTIVE L_3 LARVAE IN POOLS OF MOSQUITO HEADS. Chanteau S*, Luquiaud P, Failloux AB, Plichart C, Ung A, Lardeux F, and Williams SA. Institut Louis Malarde, Tahiti; Centre ORSTOM, Tahiti; and Smith College, Northampton, MA.

The assessment of the impact of a filariasis control programme is based on the determination of parasitemia in humans and of the proportion of infectious mosquitoes. This implies the dissection of thousands of mosquitoes and use of morphological criteria to identify the larval stage and the species involved. Species-specific PCR assays are available, but to date none of them are stage-specific. We have used the species-specific *Wuchereria bancrofti Ssp* I repeat PCR to detect a single infective L_3 larva from pools of 50 mosquito heads. Even though the use of heads will underestimate the infectious rate, it is useful because there are no stages other than infective L_3 larvae found in the head. A simple and effective method, combining freeze/boiling and silica particle extraction was developed to release filarial DNA free of PCR inhibitors. As little as 1/1000 L_3 (about 0.1pg of filarial DNA) can be detected by ethidium bromide staining of PCR products run on agarose gels. We have generated a semi-quantitative PCR assay to estimate the number of infective L_3 larvae in mosquito pools, based upon the signals obtained using control pools inoculated with increasing numbers of L_3 larvae. For field applications, various methods (EDTA and drying) to preserve mosquitoes for later PCR processing and the use of lyophilized PCR mixes have been evaluated. Continued improvement of these DNA technologies will enable the application of this assay in real field conditions. This assay will be compared to conventional dissection methods in a community pilot study on ivermectin in French Polynesia.

457 DETECTION OF *WUCHERERIA BANCROFTI* CIRCULATING ("FREE") DNA IN BLOOD AND PLASMA USING THE *SSP I* PCR SYSTEM. Zhong M*, Williams SA, McCarthy J,and Ottesen E. Department of Biological Sciences, Smith College, Northampton, MA; and Laboratory of Parasite Diseases, National Institutes Health, Bethesda, MD.

Last year we presented data on a sensitive *Wuchereria*-specific PCR assay developed based on a new repeat DNA family (the *Ssp* I repeat) isolated from *W. bancrofti*. The sensitivity and specificity of this PCR system indicates its potential for ultra-sensitive detection in field collected samples and should

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