

other sponsored research organizations. Courses focused on patient-oriented research, grant and manuscript writing, research budget management, and laboratory-based research training have been conducted jointly with UEM/UCSD faculty; these have been facilitated through bioinformatics investment to create distance and electronic learning and digital reference material. We have actively engaged with relevant stakeholders within government and universities to align research development with national priorities.

**Summary/Conclusion:** The investment in the MEPI program in Mozambique has resulted in significant progress in establishing sustainable research capacity to conduct basic, translational, and clinical/public health research aligned with national priorities. This will enhance the ability of Mozambique to address critical locally relevant biomedical priorities with the goal of improving public health and maintaining faculty within Mozambique's public medical schools.

### First report of multiple mixed-subgenotype infections of *Acanthamoeba* spp. from clinical isolates of human keratitis cases in Japan

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**Background:** *Acanthamoeba* has a worldwide distribution in the environment. Nowadays, the cases of *Acanthamoeba* keratitis (AK) have surged all over the world along with its disease burden due to increasing use of contact lenses, not only for vision correction but also for cosmetic purposes. In this study, we aimed to reveal the genetic diversity of *Acanthamoeba* spp. existing in clinical keratitis patients using both the nuclear small subunit ribosomal RNA (18S rRNA) and mitochondrial small subunit ribosomal RNA (16S rRNA) gene loci and to evaluate the incidence of mixed-genotype infections.

**Structure/Method/Design:** Twenty-seven corneal scraping and preserving solution samples were obtained from patients with visual complaints in Japan. To evaluate the genotype distribution, all samples were characterized based on partial sequences of approximately 550bp of the 18SrRNA gene and 1540bp of the 16SrRNA gene loci. Where mixed-genotype infection profile was suspected, a subcloning strategy was adopted to determine the sequences.

**Results (Scientific Abstract)/Collaborative Partners (Programmatic Abstract):** In this study, the results of 18S and 16S rRNA genotyping were found to match perfectly with each other. We also confirmed two cases of subgenotype s mixed sequence profile of *Acanthamoeba* in a single clinical sample of AK. In the 18S rRNA gene analysis, subcloning was adopted for the sample that showed mixed electropherogram. Sequencing and alignment of the clones gave unique genotypes that did not overlap with the other genotypes. To evaluate the contamination risk with other strains, we tried single trophozoite PCR after years of cultivation and got the same results for both strains. Differences were observed between nuclear and mitochondrial genetic characteristics; the mixed haplotype profiles from two individual strains were detected only in the nuclear gene analysis, but not in the mitochondrial gene analysis. Taken these results together, these strains are considered to possess heterozygous nuclear 18S rRNA genes and homozygous mitochondrial 16S rRNA genes.

**Summary/Conclusion:** To the best of our knowledge, this is the first report of subgenotypes mixed infections of T4 from AK cases in Japan. After considering the subcloning results acquired in this study, it seems that the incidence of different genotypes mixed infections is underestimated possibly due to the technical limitations of methods. However, there are few reported cases of mixed infection with different genotypes or subgenotypes of *Acanthamoeba* spp. from AK

patients throughout the world. This is also the first-time adoption of a subcloning technique to detect mixed infection of *Acanthamoeba* spp. in Japan. The detection of multiple clone samples opened an important investigative point concerning mixed infections versus multi-copy and heterozygosity theories.

### Diabetes in Armenia: Assessing population knowledge and awareness of type 2 diabetes

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**Background:** Diabetes is a rising health disparity in former Soviet countries. Armenia, one of these countries, reported that diabetes accounted for 8.9% of the country's overall mortality in 2011. Armenia's age-adjusted mortality rate of type 2 diabetes is 76.3 per 100,000 of the population; more than three times the United States (20.8 per 100,000). There is little to no data on the level of knowledge and awareness of type 2 diabetes in Armenia. Because of this, it is difficult to determine the underlying cause of this high mortality rate. The object of this study was to assess the knowledge, awareness, and preventive practices of type 2 diabetes, among the Armenian population, in order to develop effective diabetes prevention programs.

**Structure/Method/Design:** A multiple site, cross-sectional, descriptive survey of the Armenian population was performed from June 22 to July 5, 2013. Eligible participants (N = 455) were aged 18 to 80, and were recruited using random-intercept sampling from four regional health centers in the Yerevan, Kotayk, Shirak, and Armavir provinces. Eligible participants completed a 42-item survey administered by research assistants with the assistance of local interpreters. The survey was coded, and descriptive statistics and chi-square tests were calculated using Stata 12.0.

**Results (Scientific Abstract)/Collaborative Partners (Programmatic Abstract):** The average participant age was 40.4 (SD 14.6) years. Of the participants, 65.4% were from rural areas. The majority was female (77%), and 66% had completed secondary schooling. Although 19% of participants reported being diagnosed with diabetes; knowledge of diabetes was limited, with 55% of participants having little to no diabetes knowledge. While 47% knew that diabetes had signs and symptoms, only 12% of the population knew at least one correct sign. Few knew that limiting sugar intake (33%) and smoking cessation (28%) could help prevent and manage diabetes. Meeting with a diabetes educator increased knowledge of diabetes and risk factors ( $P = 0.02$ ).

**Summary/Conclusion:** A high proportion of participants reported risk factors for diabetes; yet knowledge of diabetes, and diabetic risk factors, was limited. Almost half of participants reported knowing the signs and symptoms of diabetes, but few could provide examples. Diabetes educators may be one avenue for providing tailored education to those at risk for developing diabetes.

### Prevalence and characteristics of pruritic HIV patients in Mangalore, India

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**Background:** The development of highly advanced antiretroviral therapy in the late 1990s has dramatically improved AIDS-associated morbidity but has also increased comorbidities. Pruritus has become one of the most commonly associated complaints of HIV patients.

Our objective was to evaluate the prevalence and characteristics of itch in HIV patients who attended a national HIV treatment program in Mangalore, India.

**Structure/Method/Design:** A cross-sectional study using validated questionnaires was administered to 343 participants at a national HIV treatment facility between June and July 2013.

**Results (Scientific Abstract)/Collaborative Partners (Programmatic Abstract):** A total of 343 participants with a mean age of 39 years (range 18-74) completed the questionnaire. The majority of the study participants were female (65%). Current pruritus was reported in 11.7% of patients. The prevalence rate was assessed to be 20.1%. A greater proportion of women (13%) than men (9.2%) with pruritus was observed. The most common symptom associated with itch was pain (12%). Those affected most frequently described having greater than 10 episodes per day (9.3%). Commonly affected areas included the anterior hands (9.9%), face (4.7%), and abdomen (3.8%). Commonly reported associated symptoms included "burning" (12.8%), "hurting" (12.8%), and

"painful" (12.8%). Patients generally reported more itching during the day (9.3%) and summertime (7.9%). Patients most frequently reported constant itching (11.4%). Pruritus-related quality of life was assessed using the Itchy Quality of Life validated questionnaire, which contained domains of symptoms, functional status, feelings, and self-perception. The patients demonstrated their pruritus-related quality of life was most affected by the symptom domain of "my skin hurts" (mean score  $\pm$  standard deviation at  $1.45 \pm 1.17$ ,  $P < 0.001$ ). In the sample of patients with pruritus, the duration of pruritus showed a weakly positive correlation with the functional domains of "my itchy skin condition makes it hard to work or do what I enjoy" ( $r = 0.3$ ,  $P = 0.01$ ) and "my itchy skin condition often makes it difficult to concentrate" ( $r = 0.2$ ,  $P < 0.05$ ). Patients with pruritus had a slightly lower CD4+ T-cell count than patients without pruritus ( $474.7 \pm 201.7$  versus  $489.6 \pm 224.6$ ), but this was not statistically significant.

**Summary/Conclusion:** Pruritus is a common feature of HIV patients and affects their quality of life.