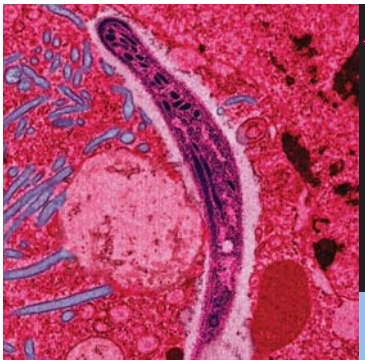


P. falciparum sporozoite in a mosquito midgut

Infectious Diseases

Washington University in St. Louis
School of Medicine

DIVISION NEWSLETTER March 31, 2012 • Volume 7, Issue 1

IN THIS ISSUE

ID NEWS & NOTES

Management of HIV Disease and Hepatitis: Highlights from the 19th CROI

Guest Faculty
Glenn J. Treisman, M.D., Ph.D.
Professor of Psychiatry and Behavioral Sciences and Internal Medicine
The Johns Hopkins University School of Medicine
Baltimore, MD

Saturday, May 5, 2012
Engineers' Club of St. Louis
St. Louis, MO
8:00 am to 1:00 pm
http://actu.im.wustl.edu

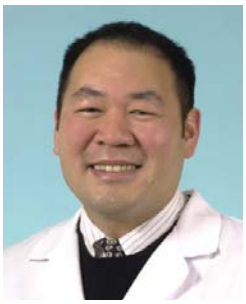
We are interested in your achievements, clinical and/or research activities, and other personal news since leaving WUSM. Please contact Dr. Gerald Medoff at *gmedoff@dom.wustl.edu* with any information you would like to share.

All division newsletters can be found at: http://id.im.wustl.edu/ and follow the link "News".

Above image *(P. Falciparum)*: CDC/Dr. Mae Melvin (PHIL #2704), 1973. == Licensin). Masthead image: Ute Frevert; false color by Margaret Shear; Copyright: © 2005 Frevert et al.

Eradication of Staphylococcus aureus Colonization in the Outpatient Setting

Bernard C. Camins, M.D., M.Sc.



Bernard C. Camins, M.D.
Assistant Professor of Medicine

Methicillin-resistant Staphylococcus aureus (MRSA) is a significant pathogen in both healthcare and community settings. Until the 1990's, MRSA infections were limited to hospitalized patients or history of frequent exposure to healthcare settings. The majority of community-onset skin and soft tissue infections (SSTI) are now caused by community-associated (CA) MRSA. Although many SSTIs are superficial, they carry significant morbidity, including pain and subsequent scarring caused by drainage procedures and time lost from school and work by patients and their families. If untreated, these superficial infections can disseminate, causing life-threatening invasive infections. The USA300 CA-MRSA clone is the predominant cause of SSTI in patients presenting to US emergency departments (ED). In 2005, there were 14.2 million outpatient clinic visits for SSTI (48.1 visits/1000 in the US), a dramatic increase from 8.6 million visits (32.1 visits/1000) in 1997. Patients with severe SSTI usually require hospitalization.

In an effort to control these SSTIs, we compared the effectiveness of several S. aureus decolonization strategies in the community setting. From 3/2007 – 5/2009, patients with acute SSTI presenting to Barnes-Jewish Hospital or St. Louis Children's Hospital, and colonized with S. aureus, were enrolled into a 4-arm (n=300, 75 per arm) randomized trial. Patients with traditional risk factors for HA-MRSA infections were excluded. Overall, 193 children (64%) and 107 adults (36%) were enrolled. All participants received personal and household hygiene education which included instruction to use only soaps and lotions in pump or pour bottles, refrain from sharing personal hygiene items (e.g., hairbrush, razor, towel), and to wash (in hot water) bed linens at least once weekly and towels and wash cloths after each use. This education curriculum was the only intervention received by the control group. The intervention groups were also treated with one of the following 5-day regimens: 1) 2% mupirocin ointment applied to both anterior nares twice daily, 2) 2% mupirocin ointment applied intranasally twice daily plus daily body washes with 4% chlorhexidine solution (used as a liquid soap), and 3) 2% mupirocin ointment applied intranasally twice daily plus daily 15-minute soaking in dilute bleach water (1/4 cup of 6% sodium hypochlorite per bathtub full of water). All 3 decolonization regimens were effective at eradicating S. aureus colonization 1 month post-intervention. The only regimen providing sustained decolonization over 4 months consisted of hygiene education, mupirocin, and bleach water baths (see Table 1).

continued page 2

Featured Colleague

Donald J. Krogstad, M.D. holding a child who had recovered from severe malarial anemia.

Dr. Krogstad, is the Henderson Professor and former Chair of Tropical Medicine at the Tulane School of Public Health and Tropical Medicine, and Founding and Former Director of the Tulane University Center for Infectious Diseases. In 2008 he stepped down from his many roles at Tulane to focus on studies of malaria in West Africa.

Dr. Krogstad arrived at Tulane in 1992 after having been at Washington University for 14 years where his research evolved from basic studies of the malaria parasite to an understanding of the bases of antimalarial action and resistance. Since that time, those studies have led to the synthesis of more than 200 candidate antimalarials, of which 66 are active in the laboratory against all known resistant parasites from across the globe. One has been found as safe as chloroquine in humans and will shortly be tested for efficacy in human subjects with uncomplicated P. falciparum malaria in Mali.

Dr. Krogstad is a Fellow of the American Academy of Physicians, the IDSA, and American Society of Tropical Medicine and Hygiene (ASTMH); former scientific program chair and president of the ASTMH, former Secretary for the Medical Sciences for the American Association for the Advancement of Science and served as a Fulbright Scholar at the University of Bamako in Mali from 2009-2011.

Dr. Krogstad and his wife Fran have two sons Aric and Kirk, who are thirty-nine years old and two grandchildren who are 1 and 3 years of age. Currently Dr. Krogstad is home recovering from a skull fracture and subdural hematoma sustained during his most recent trip to Mali and hopes to be both at work and traveling again in the near future.

Staphylococcus aureus colonization

continued from page 1

Table 1 Participants Decolonized 1 and 4 months after performing measures

Intervention Arm	1 Month Post-Intervention % Decolonized (N)	P	4 Months Post-Intervention % Decolonized (N)	P
Control	38% (24/64)	--	48% (31/64)	--
Mupirocin alone	56% (35/62)	0.03	56% (32/57)	0.40
Mupirocin + Chlorhexidine	55% (35/64)	0.05	54% (31/57)	0.51
Mupirocin + Bleach Baths	63% (34/54)	0.006	71% (36/51)	0.02

In evaluating recurrent SSTI, participants assigned to the mupirocin and chlorhexidine arm reported a significantly lower incidence of SSTI at 1 month compared to controls (see Table 2). However, this difference was not sustained over the course of the study. In fact, the overall cumulative infection incidence was 36% over 4 months and 49% over 6 months. We also evaluated protocol acceptability and adherence. Mupirocin, chlorhexidine washes, and bleach baths were reported as "easy" to perform by 84%, 82%, and 77% of participants, respectively. In groups assigned to multiple interventions, adherence to hygiene measures was consistently lower than adherence to topical treatments.

Table 2 Cumulative Recurrent Skin and Soft Tissue Infection by Intervention

Intervention Arm	1 Month Post-Intervention		4 Months Post-Intervention		6 Months Post-Intervention	
	% Reporting SSTI (N)	P	% Reporting SSTI (N)	P	% Reporting SSTI (N)	P
Control	17/65 (26)	--a	26/64 (41)	--a	28/52 (54)	--a
Mupirocin alone	14/62 (23)	0.64	20/59 (34)	0.44	0.44	0.84
Mupirocin + Chlorhexidine	7/63 (11)	0.03	19/57 (33)	0.41	23/54 (43)	0.25
Mupirocin + Bleach Baths	12/55 (22)	0.58	18/52 (35)	0.51	21/43 (50)	0.63
a "Personal and Household Hygiene Education Only" was used as the comparator group to determine RR, ARR, and P values.						

The main objective of our study was to determine which colonization regimens were effective at eradicating S. aureus colonization. Future studies will determine if periodic (e.g., monthly) decolonization are effective at preventing recurrences of SSTIs.

Fritz, Stephanie A.; Camins, Bernard C.; Eisenstein, Kimberly A.; Fritz, Joseph M.; Epplin, Emma K.; Burnham, Carey-Ann; Dukes, Jonathan; and Storch, Gregory A., *"Effectiveness of measures to eradicate Staphylococcus aureus carriage in patients with community-associated skin and soft-tissue infections: A randomized trial."* Infection Control and Hospital Epidemiology.32,9. 872-880. (2011).

Awards & Announcements

RECENT RESEARCH AWARDS		
PRINCIPAL INVESTIGATOR	**AWARD**	**PROJECT TITLE**
Gregory A. Storch, M.D.	National Institute of Allergy and Infectious Diseases, National Institutes of Health	Defining the Human Virome in Immunocompromised Children; $3.3 million

Special Recognition

Thomas C. Bailey, M.D., Professor of Medicine, was appointed as a member of the Agency for Healthcare Research and Quality (AHRQ) Health Information Technology Research study section, and has been asked to serve as a member of the first Special Emphasis Panel to review applications to the Patient Centered Outcomes Research Institute (PCORI).

Jeffrey P. Henderson, M.D., Ph.D. was invited and chaired a scientific session, *Chemical Biology in Model Organisms*, at the inaugural Keystone Symposium on Molecular and Cellular Biology that ran February 12-16, 2012 in Santa Fe, New Mexico.

Stephen Liang, M.D. and Melissa Viray, M.D. , Infectious Diseases Fellows, are recipients of the Society for Healthcare Epidemiology of America (SHEA) Jonathan Freeman Scholarship to attend the Basic Training in Healthcare Epidemiology Track of the SHEA Spring 2012 conference . The scholarship was established to promote the training of outstanding infectious diseases fellows who demonstrate interest in the field of healthcare epidemiology.

Thank you to our Supporters

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Site Leader Named for the AIDS Clinical Trials Unit

The ACTU is delighted to introduce our new site leader, Rachel Presti, MD, Ph.D. Dr. Presti joined the Infectious Diseases Division as a faculty member in 2006, following a two year research fellowship in the division. She received her B.A. from Scripps College in Claremont, California and her medical and post graduate degrees from Washington University. She completed her Internal Medicine residency at Barnes-Jewish Hospital and Washington University School of Medicine. She currently sees patients at the Washington University Infectious Diseases Clinic and has been an investigator at the Washington University AIDS Clinical Trial Unit since 2006.

We welcome Dr. Presti as our site leader. Should you need anything or have questions, please don't hesitate to contact Dr. Presti at rpresti@dom.wustl.edu or call the ACTU at 314-454-0058.

Rachel M. Presti, M.D., Ph.D.
Assistant Professor of Medicine

Welcome to our new staff

Patricia (Pat) Cornwell joined the Division in January 2012 as a Grant Assistant III. She recently relocated back to Illinois after 23 years on the Missouri side. Pat has over eight years of grant experience with pre- and post-award phases. Her previous grant experiences include Washington University School of Medicine, Department of Radiology and the University of Missouri Columbia Outreach and Extension Division.

Pat is a member of the Illinois Coalition Against Domestic Violence (ILCADV) and has been an advocate against domestic violence for over 10 years. She volunteers for multiple organizations, including the National Council for University Research Administrators (NCURA). Her hobbies include hiking and photography.

In her role with the division, she performs as Lead Grant Assistant to the principal investigator with grant/study preparation, recording, reporting, and control. She also provides backup for Senior Research Administrators when needed. Additionally, she looks forward to serving on medical school/university committees as needed.

Pat can be reached at (314) 286-2567 or by email pcornwel@dom.wustl.edu.

farewell . . .

Best wishes to Dr. Jessica Grub who recently resigned from her position at Washington University to spend more time with her family. Dr. Grubb joined the Infectious Diseases Division in 2005 and prior to her departure served as the AIDS Clinical Trials Unit site leader. Both patients and staff will miss Dr. Grubb.