

AFGHAN HURDLES: FROM SIGNING THE PLEDGE IN 2012 TO HAND HYGIENE IMPLEMENTATION IN 2014

Topic Area: 6. Special patient populations

Topic: 6d. Infections and infection prevention in the developing world

Johannes Georg Böttrich^{1*}, Zelghai Tokhi², Beat Roth¹, Didier Pittet³, Kurt-Wilhelm Stahl⁴,
¹Waisenmedizin PACEM-Schweiz, Wangen bei Olten, Switzerland,
²Pharmaceutical Faculty, Balkh University, Mazar-e-Sharif, Afghanistan,
³Infection Control, Hôpitaux Universitaires de Genève, Genève, Switzerland,
⁴Waisenmedizin e.V., Freiburg / Breisgau, Germany



Waisenmedizin (WM e.V.) – PACEM
 Promoting Access to Care with Essential Medicine

Background: In cutaneous leishmaniasis (CL), sandfly-transmitted parasites cause immune reactions with sting site disruptions of the skin, the body's mechanical barrier to infections, which become prone to super-infections and thus lead to chronic wounds. Cutaneous Leishmania (CL) skin defects lasting for > 6 weeks¹ similar to chronic wounds of the elderly in developed countries are prevalent in Afghanistan² in uncovered body parts mostly of young children after their first contact with the parasite through a sand-fly bite. From two phase II CL trials^{3,4} it appears that clean CL wound management is crucial for rapid healing. They focus on hygienic wound care of Old World Leishmaniasis skin lesions as first line treatment rather than on anti-parasitic measures. Since multi-resistant pathogens are responsible for tissue infections⁵ it appears all the more a pivotal and basic necessity within treatment of CL wounds, that health-care workers (HCWs) are educated and practice "Clean Hands" to reduce the burden of disease⁶.

Objectives: As alcohol-based hand-rubs (ABHR) were not available in Afghanistan⁵ in 2012 when signing the WHO pledge⁶ to reduce the burden⁷ of the CL disease, we wanted to foster the local low-price ABHR production by involving the Pharmaceutical Faculty on the new Campus (PharmFac).

Methods: From 22 to 29 October 2014, we performed a "Clean Hands for Clean Wounds" Mission to Mazar-e-Sharif (MeS), Afghanistan, to follow-up the WHO Clean Care is Safer Care - pledge signed by the Afghan Ministry of Public Health⁹ in the context of a treatment scenario of Leishmaniasis – wounds at the Leishmania Centre renovated by WM e.V. Freiburg with the financial support of the German Government. In the absence of PharmFac labs, we used the lab of the renovated leishmania centre of the Balkh Civil Hospital, which two of us (DP & KWS) had audited in 2012. We trained the students on the job of producing 3 batches (each 50 bottles) of 100 ml ABHR according to the WHO guide using the WHO starter kit ("WHO Formula 1" with 80% Ethanol) handrub production⁸.

Results: Nurses, doctors and students were quite well informed of the importance of practicing the "5 moments". Through our assistance, the students, who participated in the daily leishmania wound patients' consultations, were highly motivated, when they understood the importance of hand-hygiene in this field. They were enthusiastic about their first opportunity of pharmaceutical bench work. They were hugely disappointed, when the later quality control at the HUG Pharmacy in Geneva revealed that two flasks of "Ethanol absolut" had been adulterated with methanol, and that they had to destroy all 150 ABHR flasks on the spot. In 2014 ABHR leftover stocks of the US Army had engulfed the bazaar of Mazar at 1/2.6 USD per litre (October 2014/February 2015). The temporary economic ABHR availability might explain the hand hygiene awareness and practice we observed in the Balkh Civil Hospital in contrast to what we had experienced in 2012. We observed hand hygiene awareness and practice in the Balkh Civil Hospital renovated by the German Government. The extremely cheap availability of the US handrub will not last. The Pharmaceutical Faculty could jump in here provided that the Pharmaceutical Faculty will get lab facilities and that the bulk war ingredients are available in the country and meet the pharmaceutical quality standards required for the WHO promoted local hand-rub production.

Conclusion: Economic ingredients of guaranteed quality constitute the bottleneck for ABHR production in poor countries, not the motivation of pharmaceutical students. Those, who feel concerned, are invited to discuss such issues with us.

Conflict of Interest/Acknowledgements: J. G. Böttrich Employee of: B. Braun Melsungen AG, Z. Tokhi, B. Roth, D. Pittet, K.-W. Stahl: All None Declared. The German Academic Exchange Service (DAAD) and the Associations Wais-enmedizin PACEM (Germany and Switzerland) financed our "Clean Hands for Clean Wounds" -Mission. We gratefully acknowledge the support of the HUG-Pharmacy (B. Matthey-Khouiti, P. Bonnabry), B. Braun Medical AG, Switzerland (D. Bussell, Th.-J. Hennig, R. Bründler, CoE Infection Control) for their handrub material donations & B. Braun Melsungen AG, Germany (U. Brauer, Medical Scientific Affairs) for paid release of JGB for this mission.

Literature:

- 1) Fonder MA, Lazarus GS, Cowan DA, Aronson-Cook B, Kohli AR, Mamelak AJ. Treating the chronic wound: A practical approach to the care of nonhealing wounds and wound care dressings. *J Am Acad Dermatol.* 2008 Feb;58(2):185-206
- 2) <http://www.emro.who.int/afg/programmes/malaria-leishmaniasis.html>
- 3) Jebran AF et al. "Rapid Healing of Cutaneous Leishmaniasis by High-Frequency Electrocauterization and Hydrogel Wound Care with or without DAC N-055: A Randomized Controlled Phase IIa Trial in Kabul" in *PLOS Neglected Tropical Diseases*, February 13, 2014, DOI: 10.1371/journal.pntd.0002694. -> <http://journals.plos.org/plosntds/article?id=10.1371/journal.pntd.0002694>
- 4) Stahl HC et al. "A randomized controlled phase IIb wound healing trial of cutaneous leishmaniasis ulcers with 0.045% pharmaceutical chlorite (DAC N-055) with and without bipolar high frequency electro-cauterization versus intralesional antimony in Afghanistan" in *BMC Infectious Diseases* 2014, 14:619 doi:10.1186/s12879-014-0619-8 -> <http://www.biomedcentral.com/1471-2334/14/619>.
- 5) Sutter DE et al. "High incidence of multidrug-resistant gram-negative bacteria recovered from Afghan patients at a deployed US military hospital" in *Infect Control Hosp Epidemiol* 2011; 32:854-860.
- 6) Pittet D., Clean hands reduce the burden of disease, *Comments, Lancet*, Vol 366 July 16, 2005.
- 7) Pittet, D et Stahl, K.-W. "CLEAN HANDS FACT-FINDING MISSION 2012 TO AFGHANISTAN: GOOD INTENTIONS, MINOR RESULTS: WHY ?" Poster P139 at ICPIIC 2013, Geneva <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3687812/>
- 8) http://www.who.int/gpsc/5may/Guide_to_Local_Production.pdf
- 9) http://www.who.int/gpsc/statements/countries/PSP_GPSC1_Endorsement_Afghanistan_Apr-2012.pdf?ua=1
- 10) <http://www.nejm.org/doi/full/10.1056/NEJMvcm0903599>



Pict. 1: Why do you neglect me?
 Typical face lesion of a new-borne girl



Pict. 2: HandRub bottles "LeiRub" with special labels dedicated to the Balkh University-Pharmaceutical Faculty-project



Pict. 3: Teaching the local handrub production for WHO-formula 1



Pict. 4: Welcome lecture by the Dean of the Pharmaceutical Faculty of Balkh University Mazar, Prof. Zelgai Tokhi, and 200 attentive Afghan pharmaceutical students and their teachers