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Outbreak of Cockroaches in an Intensive Care Unit



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Healthcare-associated infections are common in the intensive care unit (ICU) and represent a significant burden for patients and the healthcare system. Often resistant to many antimicrobial agents, viruses and bacteria are transmitted by the droplet and airborne routes or by the hands of healthcare workers. Prevention is of the utmost importance for these three routes of pathogen transmission. Although vector-borne transmission and parasitological infections do not play a major role in ICU settings, it can be surprising to discover some unexpected visitors and how they arrived in your ICU....

We reported an outbreak of cockroaches in the medical ICU of the University of Geneva Hospitals in summer 2006 (Uçkay et al. 2009). The ICU is located on the ground floor next to an outdoor recreational area. Smoking inside hospital buildings is strictly prohibited for patients and healthcare workers.

Roughly 30 cockroaches had been observed either hiding inside oxygen masks, moving around on the light panels below the ceilings, or dropping on to intubated patients during night shifts. External pest control experts identified the species as *Ectobius vittiventris*, a field-dwelling cockroach. It had entered the ICU through the French windows from the outdoor recreational area. Despite verbal recommendations and repeated interdictions to the contrary, doors had been secretly opened using screwdrivers to allow healthcare workers to smoke during night shifts.

Medical reasons to combat cockroaches are two potential health problems. First, cockroaches may provoke allergic reactions (Tungtrongchitr et al. 2004). Second, most "nosocomial" cockroaches may carry medically important microorganisms such as *Escherichia coli*, *Klebsiella* sp, *Acinetobacter baumannii*, *Pseudomonas aeruginosa* or fungi on their external surface or in the alimentary tract with the possibility to disseminate these via the orofecal route (Cotton et al. 2000; Salehzadeh et al. 2007).

Successful management relies on the species-level identification (among some 4000 species worldwide) to tailor control strategies. *E. vittiventris* lives outdoor, does not fear light, and is also active during daytime. It is easily confused with *Blattella germanica* (the German or croton cockroach), probably the most important cockroach pest worldwide in terms of frequency and danger for patients. *B. germanica* is nocturnal, cannot fly, and is always encountered within human habitations. In contrast to *B. germanica* (Figure), *E. vittiventris* is considered harmless for ICU patients, but might become a serious public relations problem for the hospital for obvious reasons. Not surprisingly, we did not observe any allergic reactions or an increase in the colonization rates of multiresistant organisms.

Since *E. vittiventris* is unable to reproduce inside buildings, stopping the entry from outside terminates the outbreak. Indeed, our outbreak was halted within three days after information to healthcare workers and permanent reclosure of all windows. So far, no recurrence has occurred after three years. No other measures such as the use of insecticides, review of the air circulation system, or changes to the architectural structures were necessary.

In Focus :Swiss Society for Intensive Care Medicine

Guiding Principles of SSICM

The Mission (why are we here?) and Vision (where do we go from here?) of the Swiss Society for Intensive Care Medicine (SSICM) were formulated by the SSICM board in the year 2009, adopted at the board meeting held on June 17, 2009, and presented at the SSICM annual meeting on September 24, 2009.

Mission

The Swiss Society for Intensive Care Medicine (SSICM) promotes high-quality, effective, efficient and comprehensive care of all patients with acute life-threatening disease or injury. Our main focus is the optimisation of patient care processes and the care of our patients' families, as well as the promotion of interdisciplinary collaboration. We promote postgraduate training and continuing medical education of all healthcare professionals involved in intensive care medicine. We promote and support research in intensive care medicine. We participate actively in activities concerning health politics at the national and international level.

Vision

The SSICM serves as a competent and dependable partner for all issues related to intensive care medicine in the Swiss healthcare system. All healthcare professionals who are involved in the provision of intensive care medicine are represented within SSICM. The core tasks of these professionals are carried out in highly specialised ICUs. SSICM actively supports and promotes continuous, high-quality patient care in the ICU. SSICM also promotes the development, implementation and management of additional concepts for alternative approaches to patient care, such as intermediate care (IMC) and medical emergency teams (METs). The development and implementation of such new models may help to avoid transfer of patients to the ICU, through provision of appropriate patient care in general acute care wards and in units independent of or affiliated

with the ICU.



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