

Risk of acquiring Rift Valley Fever in a hospital setting?

In August 2000, the first confirmed occurrence of Rift valley fever (RVF) outside the African continent was described in the Arabian Peninsula. At that time, the true risk to health-care workers (HCWs) for acquiring RVF in the hospital setting had remained unstudied. The objective of this study is to estimate the risk to HCWs for the nosocomial acquisition of RVF in Jazan.

This study was conducted at four hospitals in the Jazan province: King Fahad Central Hospital (KFCH), Samtah General Hospital (SGH), Al-Ardah General Hospital (AGH), and Beash General Hospital (BGH). A retrospective cohort study was conducted whereby two groups, high and low risk, were identified according to their exposure to potential nosocomial risk factors. These factors included contact with 10 or more RVF patients, body fluids, potentially infectious material, or performing invasive procedures to patients. A questionnaire inquiring about demographic characteristics, job description and place of assignment, level and type of hospital exposure, precautionary measures used and possible environmental exposures, was completed by HCWs in both groups. A blood sample (5 ml) was taken from each participant to be tested for IgM and IgG antibodies to the RVF virus. Evidence of infection during the epidemic was defined as any individual in the cohort with detectable IgM and IgG antibodies to the RVF virus.

A total of 703 HCWs participated in this study, most of whom were from KFCH (266 or 38%) and SGH (240 or 34%). Their mean age was 33 ± 9 years, and males represented 49% of the study population. The most common nationalities included were Indians (37%), Saudis (26%) and Filipinos (12.5%). By occupation, nurses ranked first 312 (44.6%), followed by cleaners 115 (16.5%) and physicians 80 (11%). A total of 336 (47.8%) of the HCWs were among the high-risk group. Among those, the most common potential risk factors

were close contact with 10 or more RVF patients (64.3%), inserting peripheral line (29%), and drawing arterial blood gases (23.8%). With respect to community exposure, 74 (10.7%) HCWs reported direct contact with animals, 347 (49%) lived in areas with heavy mosquito infestation, but only 242 (35%) reported having had mosquito bites.

With respect to hospital protective measures employed by staff, 73.3% reported wearing gloves, 68% reported using face masks, and 60.8% reported always wearing gowns when dealing with suspected or confirmed RVF patients, body fluids, or potentially infectious material. Four (0.6%) of 703 participants had evidence of recent RVF virus infection, all of whom were in the "low risk group" and reported exposure to known RVF risk factors at their community level.

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Editorial note: Only four (0.6%) of the participants were infected by RVF virus, which is far below a previously reported rate of 6.7%.¹ This was, most probably, because HCWs had less exposure to animals and mosquitoes than the general population. Three RVF antibody positive HCWs were from Al-Ardah hospital and were living outside the hospital. Al-Ardah was the area where the first and majority of the RVF cases in Jazan had been reported, and where 90% antibody prevalence was found among animals in a survey done in this area.²

Needlestick and other percutaneous injuries resulting in exposure to blood or other potentially infectious materials continue to be of concern due to their high occurrence and their

severe adverse outcomes.³ Interestingly, Despite all potentially "high risk" nosocomial exposures, none of the potentially high-risk groups were found to have evidence of infection with the RVF virus.

The four RVF antibody positive HCWs acquired the infection, most probably, as a result of environmental exposure rather than nosocomial acquisition. Nosocomial transmission, if it occurs, seems to be very rare in the context of, at least, rudimentary standard precautions.

Our data strongly suggest that implementation of standard precautions alone is sufficient when dealing with known or suspected RVF patients.

References:

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