Type: Poster Presentation

Epidemiology of dog bites during floods in District Naushahro Feroze, Sind, Pakistan, 2010

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Background: There is no any existing Rabies surveillance system in Pakistan hence reported cases are underestimated but burden is high notably affecting children of poor rural communities. Threats increased when mega flood hit throughout the country specially the areas of basin river Indus results in shifting of population in temporary relief camps. Applied strategies are needed to minimize the risk. This study highlights baseline epidemiology of dog bites in flood affected areas of Sind province, Pakistan, to plan a cluster-randomized intervention trial to control the incidence rates against dog bites secondary to increase in rabies in such type of disasters.

Methods & Materials: A sentinel site based descriptive study was conducted from July-December 2010. Followed to each dog bite case residing from flood affected areas of taluka Kandiaro within study period was documented using a pretested and standardized questionnaire which was actively collected every day at the time of receiving 1st shot of prophylactic vaccine. The study sample was set on targeted all 3635 displaced persons from flood affected areas.

Results: During study period 96 incidents were reported to sentinel site. The incidence rate for bite incidents during study period remained 2.6 per 100 person time (CI 95%: 2.1–3.2 per 100 person time) The mean age in bite victims was 19. Their own dogs were 23% (n = 22) of cases. The bites involved the face (Grade-III) in 3% (n = 3). In 61% (n= 59) incidents were applied a paste of red chilies and 18% (n = 17) applied ash to the wounds as disinfectant. No human death reported during study period but 6 dogs were killed by their owners while 41 dogs were lost.

Conclusion: Through this assessment at the time of flood disaster showed the extremely high incidence of dog attacks, highlighting the need to develop adapted control policies on rabies vaccination and providing pre-intervention baselines. The rural areas are a high canine-rabies endemic in sind province and dog bites are frequent in humans, making rabies a real and present risk for country.

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MRSA infection and colonization rates in Africa and Middle East: A systematic review & meta-analysis

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Background: Knowledge of methicillin-resistant Staphylococcus aureus (MRSA) infection and colonization rates is important for clinical and infection control purposes. This was a systematic review and meta-analysis to investigate MRSA rates in adults in Africa and Middle East (AFME).

Methods & Materials: During September 2013 PubMed and Medline Plus were searched using pre-specified keywords. Non-AFME, case reports, reviews, editorials and study protocols were excluded. Data were extracted and stratified by infection or colonization. MRSA infection rates were calculated using weighted averages of MRSA to Staphylococcus aureus (SA) infection ratio with 95% confidence intervals (mean, 95% CI). The ratio of individuals with MRSA colonization to number of people tested was used to calculate MRSA colonization rates (mean, 95% CI). Data analyzed using Microsoft Excel and SAS 9.3 (SAS Institute, Cary, USA).

Results: Eighty-four MRSA infection studies (15,789 individuals; 23,170 isolates) and 30 MRSA colonization studies (5,894 individuals, 3,773 isolates) were identified. Overall, MRSA constituted 48.8% (40.4-57.2%) of all SA infections, including 46.9% (36.9-56.9%) of blood stream, 42.1% (31.8-52.4%) of skin and soft tissue and 57.3% (46.2-68.3%) of bone and joint infections. Only 5 studies (n = 3660) presented both community (CA) and healthcare-associated (HA) MRSA infections. In these studies, the mean CA-MRSA to all MRSA infection ratio was 14.4% (5.9-22.8%). Within AFME, MRSA infection rate was highest in the Arabian Peninsula (66.4%; 60.7-72.2%), followed by Northern Africa (48.6%; 39.2-57.9%), the Middle East (47.5%; 38.7-56.4%), sub-Saharan and central Africa (40.4%; 32.5-48.3%) and South Africa (24.4%; 14.8-34.0%). Crude mortality, reported in only 9 studies (n = 4444), was relatively high at 43.8% (36.1%-51.6%).

The average MRSA colonization rate was 15.5% (13.4-17.6%). However, the MRSA colonization rate was 24.1% (21.6-26.5%) in individuals with chronic medical conditions, 2.3% (1.5-3.2%) in healthy subjects and 5.8% (3.4-8.2%) in healthcare workers. Furthermore, MRSA colonization rates were highest in South Africa (21.2%; 9.8-32.5%) followed by Middle East (15.8%; 14.0-17.6%), sub-Saharan and central Africa (14.1%; 9.8-18.4%) and the Arabian Peninsula (6.0%; 2.8-9.1%).

Conclusion: MRSA infection and colonization rates are moderate to high in AFME region, with remarkable variations from one area to another. These data have direct treatment and infection control implications.