

## SEROPREVALENCE OF AND RISK FACTORS OF RIFT VALLEY FEVER AND Q FEVER IN DOMESTIC RUMINANTS OF BANGLADESH

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**Intro:** Rift valley fever (RVF) and Q fever are vector-borne zoonotic diseases affecting both humans and many animal species, and are responsible for a high rate of abortion in infected domestic ruminants. Although animals are the main source of RVF and Q fever outbreaks in humans globally, the disease remains underestimated in Bangladesh. In order to fill this gap, we conducted a cross-sectional study to determine the seroprevalence of RVF and Q fever and to identify the potential risk factors associated with their infection in domestic ruminants in Bangladesh.

**Methods:** We collected 568 blood samples from camels (n = 36), cattle (n = 56), sheep (n = 357), and goats (n = 119) from three districts in Bangladesh between 2017 and 2018. We administered a pre-tested questionnaire during sample collection. We tested serum samples using a competitive enzyme linked immunosorbent assay (c-ELISA) to detect RVF and Q fever specific immunoglobulin (IgG).

**Findings:** The overall seroprevalence of Q fever was 8.45% (n = 48; 95% CI: 06.3–11.0), comprising of camel-16.67%, goats-10.08%, sheep-7.84%, and cattle-3.57%. Seroprevalence was higher in adults (n = 45; 10.3%), fair body condition (n = 6; 19.35%), and animals fed on a zero-grazing system (n = 43; 11.23%). In a multivariable logistic regression model, animal species and body condition score were significantly associated with Q fever seroprevalence (p < 0.05). Antibodies against RVF were not detected in any of the sera tested.

**Conclusion:** This study revealed the evidence of Q fever antibodies in domestic ruminants of Bangladesh. Although the data findings do not provide any RVF serological evidence in the studied population, the probability of the introduction of exotic arbovirus in Bangladesh cannot be ignored, and further studies should be continued in livestock and vector populations for the risk of the emergence of new vector-borne viruses in non-endemic countries.

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## POST-TRAUMATIC OSTEOMYELITIS OF THE FEMUR CAUSED BY STREPTOCOCCUS AGALACTIAE

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**Intro:** Osteomyelitis is commonly caused by Staphylococcus aureus, Streptococcus pyogenes, and Enterobacteriaceae, but rarely due to Streptococcus agalactiae as it is frequently screened for pregnant women in association with neonatal meningitis. A post-traumatic osteomyelitis caused by Streptococcus agalactiae with emphasis on its likely pathogenesis is presented.

**Methods:** A 45-year-old man with no known medical illness, admitted for removal of implant and interlocking nails of his right femur. He had been involved in a motor vehicle accident in 1993 and suffered an open fracture of right femur. An implant and interlocking nails were inserted. He first noticed pus was discharged intermittently from the wound since 2011 until recently, where the amount of the pus was increased with frequent daily discharge noted over the medial and lateral aspect of the wound. There was no history of genitourinary tract infection. He was alert and conscious with stable vital signs on examination. Lower limb examination revealed minimal swelling over the medial distal aspect of the right femur with pus discharging from sinus associated with warmth and mild tenderness. The sensation was intact. Review of other systems was unremarkable. Intravenous vancomycin was commenced empirically after collection of blood and pus swab for culture and sensitivity (C&S).

**Findings:** Thus, wound debridement and removal of implant were performed. Evidence of sinus communicating outside, with nails and screws were filled with pus and necrotic tissue found intraoperatively. Tissue and pus were sent for C&S. The findings on imaging were in keeping with osteomyelitis. Culture of swab, pus and tissue isolated Streptococcus agalactiae susceptible to penicillin, with no growth detected in the blood. The antibiotic was deescalated to benzylpenicillin for six weeks.

**Conclusion:** Streptococcus agalactiae may colonise the rectum leading to persistent colonisation of the implant resulting in infection and adjacent spread. Persistent adherence and colonisation mediate biofilm production leading to chronic disease.

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## MORTALITY EVENT AMONG CROWS IN BANGLADESH: A CONCERN FOR PUBLIC HEALTH

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**Intro:** Earlier studies have demonstrated that domestic poultry sold in the live markets throughout Bangladesh carry a wide range of avian influenza virus (AIV) strains. Poultry sold at the market are usually slaughtered on site and the offal is disposed of without any containment. As a result, crows get exposed to this potentially infected waste. Here, we are presenting the mortality events among crows from 2008-2019.

**Methods:** From 2008 to 2018, a total of 11 events of crow mortality were identified in different places in Bangladesh. Reports from different newspapers, abstracts presented in different conferences, and published manuscripts were included.

**Findings:** In 2008 mortality event was reported from Patuakhali, Dinajpur, and Chittagong, in 2011 from Barisal, Patuakhali, and Dhaka, in 2016 from Rajshahi and Natore, in 2017 from Rajshahi and Dhaka, and in 2018 from Rajshahi and Jessore. Published reports of outbreak investigation from six sites were reported: at Patuakhali and Dhaka in 2011, at Rajshahi in 2016, at Dhaka and Rajshahi in 2017, and at Rajshahi in 2017 and 2018. All the crow mortality events took place during the winter months. Cloacal and tracheal swabs from dead and morbid crows and pooled environmental swabs from surrounding live bird markets in case of all outbreak investigations were tested positive for highly pathogenic avian influenza (HPAI) H5N1 through RT-PCR.

**Conclusion:** Proper disposal of poultry waste and improved biosecurity in the live bird market may break the pathway of viral transmission from poultry to crows. We cannot roll out the proba-