Efficiency of the Clinical Veterinary Diagnostic Practices and Drug Choices for Infectious Diseases in Livestock in Bangladesh

As in most low-income countries, adequate laboratory facilities are not available in Bangladesh to assist veterinarians in diagnosing animal diseases. We aimed to determine the efficiency of veterinary diagnoses for two common ruminant diseases in Bangladesh: Peste des petits ruminants (PPR) and foot-and-mouth disease (FMD). We conducted the study from May 2009 to August 2010 in three government veterinary hospitals where veterinarians collected samples from sick livestock and recorded the presumptive diagnosis on the basis of clinical presentations. Samples were tested for PPR and FMD using real-time RT-PCR. We estimated the sensitivity, specificity, positive predictive value (PPV) and negative predictive value (NPV) of the presumptive diagnoses when compared to laboratory tests. We tested 539 goats for PPR and 340 cattle and goats for FMD. Our results indicate that the veterinarians' presumptive diagnoses were different from laboratory findings for both PPR (P < 0.05) and FMD (P < 0.05). The overall sensitivity of the presumptive clinical diagnoses was 54% (95% CI: 47–61%) while specificity was 81% (95% CI: 78–84%) compared to real-time RT-PCR tests. The kappa value obtained in our validation process for PPR (kappa: 0.25) and FMD (kappa 0.36) indicated a poor performance of the presumptive diagnoses. Most of the animals (93%) were treated with antibiotics. Our findings indicate that veterinarians can detect animals not infected with FMD or PPR but miss the true cases. The clinical competency of these veterinarians needs to be improved and access to laboratory diagnostic facilities could help veterinarians to improve the diagnostics and outcomes. The rational use of antibiotics by veterinarians in animals must be ensured.

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