

Letter to the editors



Canine corona virus in Nigeria: a missed diagnosis or an under reported panzootics?

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Canine corona virus in Nigeria: a missed diagnosis or an under reported panzootics?

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In Nigeria, dogs are kept as a companion animal, or a source of protein [1], with an estimated dog population of about 2-5 million based on the population density of 1: 13 households [2,3]. Canine Corona Virus (CCoV) is a viral disease enzootic in dog worldwide [4]. Two distinct genera are known, CCoV-I, CCoV-II [5,6], they are responsible for mild, self-limiting gastrointestinal infections in dogs [5]. CCoV-II has two subgenera CCoV-IIa and CCoV-IIb based on its genetic

relatedness to transmissible gastroenteritis virus of Swine, (TGEV) [5]. In May 2005, the outbreak of a fetal, systemic disease in 3 miniature pinschers and a cocker spaniel, characterized by lethargy, vomiting, pyrexia, hematuria and neurological symptom initially thought to be caused by Parvovirus was identified as a pantropic coronavirus variant (CCoV-IIa) [5]. Curiously, CCoV is rarely reported or listed as a differential diagnosis, during clinical diagnosis and management of canine diseases in Nigeria.

Similarly, a retrospective review of the animal disease line list from the Federal department of Veterinary services in Nigeria between, 2000-2010, showed that no case of CCoVs was reported across the 36 States of Nigeria and the Federal capital territory (FCT), neither was it listed as a reportable animal disease on the animal disease information system server 2 (ARIS 2), the official platform for reporting animal diseases in Nigeria during the period in view. Consequently, we conducted a cross-sectional survey involving 69 Veterinarian in small animal practices in Nigeria, a structured pre-tested questionnaire was purposively administered to clinicians to determine the availability of laboratory services as an integral component of veterinary diagnostics, the basis on which management of suspected cases of CCoV, Canine Parvo viral enteritis, and Canine Adenovirus was made by a veterinarian. On the availability of laboratory services, 20 (28.6%) of respondents has no laboratory facilities (LF) as part of their clinical practice. Thirty-nine (57%) relied solely on a clinical symptom alone to make a diagnosis of Canine diseases, 3 (11.4%) of veterinary hospital (VH) with LF conducts the virological test. Fifteen (22.9%) of clinician-reported managing suspected cases of CCoV, however, 8 (54.6%) of them posited that management was based on clinical symptoms alone. We reported that only 14 (20.6%) of dogs presenting symptoms similar to canine parvo viral enteritis, adenoviruses were screened for canine coronavirus (Table 1).

Conclusion

Veterinarians have been at the forefronts of management and containment of disease outbreaks as a critical stakeholder in the global one health agenda, consequently, the ability of Veterinarians to detect diseases in an animal may serve as an early warning system for identifying the aetiology of a disease or organisms with a potential zoonotic risk. However, in Nigeria diagnoses of animal diseases are often based on clinical symptoms alone, consequently, emerging and re-emerging diseases may be missed due to poor laboratory diagnostic culture. Furthermore, clinicians and client may be at risk of potential zoonoses when wrong diagnoses are made based on clinical symptoms alone. Screening of dogs in Nigeria may enhance detection of canine diseases, and differentiate the canine parvoviruses, canine adenoviruses during medical diagnosis. Since virological test are required for confirmatory diagnosis of CCoVs, electron microscopic examination of faecal suspension, tissue culture and viral neutralization techniques may be used, however, when viral load are very low in tissue. A nested polymerase chain reaction (n-PCR) assay specific for detection of CCoV may be more effective. Veterinarians could develop a framework for routine and comprehensive screening, management of the zoo, wild and companion animals for zoonotic diseases, which could be funded by the government. This may reduce the cost of management of animal diseases, ensure early disease detection and prevent the emergence or re-emergence of a potential panzootic with zoonotic potential.

Competing interests

The authors declare no competing interests.

Authors' contributions

Dr Amao and Onaga read the manuscript and made valuable contributions. All the authors have read and agreed to the final manuscript.

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Table

Table 1: questionnaire response on basis for management of canine corona virus in veterinary clinic across Nigeria

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Table 1: questionnaire response on basis for management of canine corona virus in veterinary clinic across Nigeria

Parameters	Range	Variable
How long have you practiced as a clinician, (N=69)	1-5	45(65.7%)
	6-10	15(22.9%)
	11-15	0
	16-20	2(2.8%)
	>22	4(5.7%)
Do you have a laboratory in your clinic, (N=69)	Responses	
Yes	20(28.6%)	
No	50(71.4%)	
How do you carry out diagnosis of canine diseases, (N=69)		
Clinical symptoms	39(57%)	
Clinical symptoms and lab	30 (42.9%)	
Do you conduct virological test in your clinic, (N=30)		
Yes	3(11.4%)	
No	27(88.6%)	
what type of test, (N=16)		
PCR	2(11.4%)	
Serology	14(87.5%)	
Are client willing to pay for lab test(N=63)		
Yes	28(43.8%)	
No	37(56.3%)	
When client decline lab test what decision is taken(N=37)		
Treat based on clinical symptoms	37(100%)	
No treatment	0	
If pet present symptoms of CPV, do you screen for CCoV, (N=67)		
Yes	14(20.6%)	
No	53(79.4%)	
Have you managed cases of CCoV,(N=67)		
Yes	15(22.9%)	
No	52(77.1%)	
"If Yes" what was the basis of your diagnosis,(N=15)		
Clinical symptoms	8(54.6%)	
Clinical symptoms and lab diagnosis	7(45.5%)	