



Correspondence

Detection of Kyasanur forest disease in newer areas of Sindhudurg district of Maharashtra State

Sir,

Western Ghats of India is known for the presence of ideal climatic conditions for ticks¹. So far Kyasanur forest disease (KFD) hotspots have been detected in five States: Maharashtra, Goa, Kerala, Karnataka and Tamil Nadu¹. In Maharashtra State, this disease was first detected in Sindhudurg district in 2016². This district has eight *talukas*, namely, Deogad, Vaibhavwadi, Kankavli, Malwan, Kudal, Vengurla, Sawantwadi and Dodamarg. After first confirmation of KFD outbreak in the Dodamarg *taluka* (2016), there was confirmation of imported KFD cases from Sattari *taluka* Goa (among cashew-nut workers) to Belgaum

(now Belagavi)^{2,3} and Banda area of Sawantwadi *taluka* where human, monkey autopsy and tick samples were positive.

The present communication reports detection of newer hot spots in Sindhudurg district in Maharashtra State: Kankavli, Kudal and Vengurla (Figure). All the human serum/blood samples, monkey autopsy samples and tick pools referred from different *talukas* of Sindhudurg district to the National Institute of Virology, Pune, India, during 2015-2017 were included (Table). The human samples were tested for the presence of KFD infection either by real-time reverse transcription polymerase chain reaction (RT-PCR) or by anti-KFD

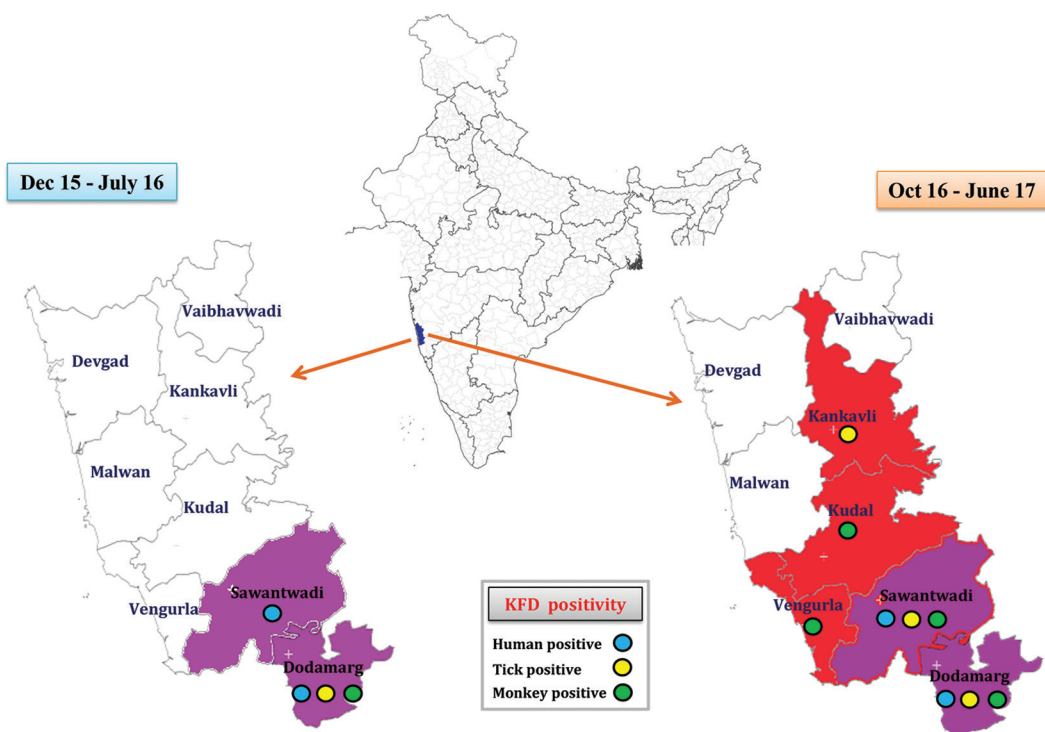


Figure. Kyasanur forest disease virus activity in human, ticks and monkeys in different *talukas* of Sindhudurg district of Maharashtra State, India (2015-2016 & 2016-2017).

Table. Kyasanur forest disease virus activity in human, ticks and monkeys in different *talukas* of Sindhudurg district of Maharashtra State, India

Location	Human positivity/total blood samples tested		Monkey positivity/total monkey autopsy samples tested		Tick pool positivity/total tick pool tested	
	2015-2016	2016-2017	2015-2016	2016-2017	2015-2016	2016-2017
Sindhudurg, Maharashtra State						
Dodamarg	164/1201	-	7/12	-	3/51	-
Sawantwadi	44/317	15/25	0/11	2/4	-	1/46
Kankavli	-	-	-	0/1	0/2	1/12
Kudal	-	-	-	5/6	-	0/17
Vengurla	-	-	-	1/1	-	0/2
Vaibhavwadi	-	-	-	-	-	0/4
Grand Total	208/1518	15/25	7/23	8/12	3/53	2/81

virus (KFDV) IgM ELISA². Tick pools and monkey necropsy samples were tested by real-time RT-PCR as defined earlier². This study emphasized on the presence of KFD activity in monkeys and ticks in other *talukas* of Sindhudurg such as Kankavli, Kudal and Vengurla where human positivity for KFD was not yet reported (Figure). The data presented showed that either KFD was spreading in newer areas of Sindhudurg or it was already present (Table) and now identified due to increased awareness among people and public health authorities of Maharashtra State, India.

Sindhudurg district in Maharashtra has become a public health concern for this tick-borne disease. Movement of monkey and rodents play as an important contributor for the spread of KFD as they harbour infected ticks maintaining the transovarial and transstadial transmission⁴⁻¹¹. Since 1920, rate of deforestation in the Western Ghats has been estimated to be 0.57 per cent annually¹². The deforestation and encroachment of local population for livestock activities helped in the transmission of this disease. The temperature and humidity of the area support the development of ticks as well as its survival, maintaining wildlife-livestock-human interfaces. The risk behaviours identified among KFDV cases in Sindhudurg were visiting to forest areas (for farming, collection of dry woods and leaves, cashew nut and coconut farming) for their livelihood.

Increase in magnitude of KFD disease in newer *talukas* of Sindhudurg calls for increase in active case surveillance and early case detection. There is also a need for preventive strategies such as KFD vaccination, health education regarding the spread of the KFD

and use of tick repellent. The community should be educated to inform health authorities about monkey deaths, as it creates a hot zone for the presence of infected ticks. The morbidity and mortality prediction among animals can be an early sign for the detection of spread of the KFD in newer areas. There is a need for intersectoral coordination among forest authorities, animal husbandries, environmentalist, entomologist and public health system for future prediction of the disease spread, which is posing a public health challenge. Apart from vaccination, development of therapeutic antiviral drugs against KFD needs to be done.

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