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Original Research Article

Medicos: knowledge and attitude on Nipah at Malappuram district, India

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ABSTRACT

Background: A recent epidemic of Nipah virus affected few districts of Malabar in Kerala, Southern India. Eighteen people died, remarking case fatality rate of 94.7%. Early diagnosis within second case by doctors and prompt control activities by the health ministry saved more lives. Objective was to study knowledge and attitude about Nipah among medical students of Malappuram District.
Methods: The study was conducted among 200 MBBS students of tertiary medical college at Malappuram district, North Kerala. A pre structured questionnaire was used to study on knowledge and attitude related to Nipah among medical. Then the data was collected, analyzed and entered into Excel. The frequency of awareness among medical students was expressed in proportions.
Results: Majority had good attitude and half of them had good knowledge about the disease. Most of students have been aware about the virus by social media (40.5%) as major source of information followed by news/newspaper (34%), (17.5 %) internet and (8%) by awareness programs.
Conclusions: Topic about Nipah virus disease should be inculcated in medical textbooks elaborately. Special training programs for medical students should be on focus and health education sessions should be enhanced.

Keywords: Nipah, Knowledge, Attitude

INTRODUCTION

Nipah virus is a recently emerged deadly paramyxovirus. It was identified as the etiologic agent of an outbreak of severe encephalitis in people with close contact exposure to pigs. Until the recent outbreak in Kerala (2018), knowledge of human infection with Nipah virus was limited to Malaysia, Singapore and Bangladesh.[1]

Nipah outbreak in Malaysia altered global public health community to the severe pathogenic potential and wide spread distribution of these unique paramyxoviruses. NiV was initially isolated and identified in 1999 during an outbreak of encephalitis and respiratory illness among pig farmers and people with close contact with pigs in Malaysia and Singapore.[2]

Clinical features ranges from asymptomatic infection to acute respiratory tract infection and fatal encephalitis. The case fatality rate is estimated to be 40-70%. The clinical signs were fever, headache, dizziness and vomiting. More than 50 % of the patients had a reduced level of consciousness and prominent brain-stem dysfunction. Older patients, especially those having diabetes mellitus and those with severe brain-stem involvement carried a poorer prognosis.[3]

The natural host for Nipah virus is fruit bats belonging to family pteropodidae and pigs. There is no treatment or

vaccine available for Nipah. Also the primary treatment is supportive care. During the first recognized outbreak in Malaysia, which also affected Singapore, most human infections resulted from direct contact with sick pigs or their contaminated tissues. Transmission is thought to have occurred via unprotected exposure to secretions from the pigs, or unprotected contact with the tissue of a sick animal. In subsequent outbreaks in Bangladesh and India, consumption of fruits or fruit products (such as raw date palm juice) contaminated with urine or saliva from infected fruit bats was the most likely source of infection.[4]

Malabar districts of Northern Kerala, India was affected with 18 deaths recently due to Nipah virus.[5] The Health Ministry and health professionals had done outstanding work to control the disease. Hence the study is highly relevant at this context and there are no similar study on knowledge and attitude among medical students on Nipah Virus globally.

METHODS

The study was conducted among undergraduate MBBS students of MES medical college Perinthalmanna, Kerala, India. The study sample was collected using convenient sampling method from MBBS Undergraduate students of all batches. The duration for sample collection was three months (3rd September 2018 to 3rd December 2018). Those that was not willing to participate in the study was excluded. The sample size was 200, calculated using the formula 4 pq/d^2. A pre structured questionnaire was used to assess knowledge and attitude related to Nipah among medical students. Then the data was collected, analysed and entered into Excel. The frequency of socio-demographic variables, knowledge and attitude among medical students were expressed in proportions. The data was projected with appropriate tables and graph. Knowledge and attitude were graded as 0-2: poor, 3-5: acceptable, 6-8: good, 9-10: very good accordingly. Ethical clearance was taken from Institutional Ethical Committee Board.

RESULTS

The average age of the medical students were 22 years and the majority of the study samples were females. 31.5% of mothers and 25.5% of fathers of the medical students studied till high school. 8% of mothers and fathers studied till higher secondary. Diploma holders include 2.5% of mothers and 4.5% of fathers. 39% of mothers and 28% of fathers studied till undergraduate and 38% of mothers and 34% fathers completed post-graduation. About half of the medical students (51.1%) belong to the family with more than 50,000 total family incomes.

41.5% of students (83) know Dr. Kaw Bing Chua discovered Nipah virus. 48% of students (96) answered correct about the discovery of Nipah virus (1998-9). 97.5% of students (195) know virus is the causative organism of Nipah fever and 69% of students (138) were aware that Nipah belongs to paramyxoviridae.

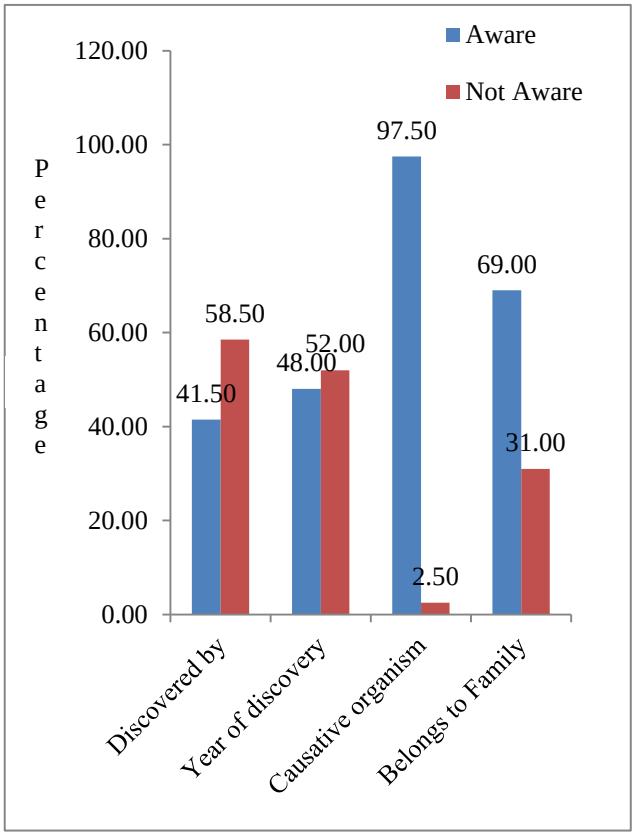

Figure 1: Knowledge about Nipah among medicos.

83.5% students (167) are aware about the previous outbreak of Nipah in Malaysia and Bangladesh and 94% of students (188) are aware about the recent outbreak of Nipah in Kerala. 72% of students (144) are aware about the reservoir host of Nipah virus (fruit bats and pig) 41.5% of students (83) are aware about the mode of transmission in Nipah fever (aerosol). 66% of students (132) know that the incubation period of Nipah virus is 5 to 14 days. 68.5% of students (137) are aware about the symptoms of Nipah virus (fever, headache, nausea, vomiting, upper respiratory tract infection). Only 37% of students (74) are aware about the fatal complication of Nipah (encephalitis). 66% of students (132) are aware about the case fatality rate 40 to 75%. Only 28% of students (56) are aware of infectivity rate (20-50%) and 48% of students (96) are aware of mode of spread (man-man, bat-man, pig-man). 50.5% of students are aware of the sample collected for lab diagnosis (throat swab, blood, urine, CSF) and 53.5% of students knew about the triple container packing for sample transportation. 44% of students had answered confirmatory test of Nipah as PCR, next generation sequencing IgM Elisa test. 67% commented about the treatment used (Ribavirin, targeted recombinant human monoclonal antibody therapy). 25.5% knew that Niv samples were tested in 3rd grade lab for confirmation.

Table 1: Knowledge on epidemiology of Nipah among medicos.

	Aware	Not Aware	Total
	N (%)	N (%)	N (%)
Knowledge on C/F and complications			
Incubation period	132 (66)	68 (34)	200 (100)
Symptoms	137 (68.5)	63 (31.5)	200 (100)
Fatal complication	74 (37)	126 (63)	200 (100)
Case fatality rate	132 (66)	68 (34)	200 (100)
Infectivity rate	56 (28)	144 (72)	200 (100)
Mode of spread	96 (48)	104 (52)	200 (100)
Knowledge about diagnosis and treatment			
Samples collected	101 (50.5)	99 (49.5)	200 (100)
Sample transportation	107 (53.5)	93 (46.5)	200 (100)
Confirmatory tests	88 (44)	112 (56)	200 (100)
Treatment	134 (67)	66 (33)	200 (100)
Niv lab grade	51 (25.5)	149 (74.5)	200 (100)

Table 2: Grading of knowledge and attitude on Nipah.

Knowledge			Attittude		
Grading	**Frequency**	**Percentage (%)**	**Grading**	**Frequency**	**Percentage (%)**
0-5	1	0.5	0-2	1	0.5
6-10	91	45.5	3-5	22	11.0
11-15	102	51.0	6-8	141	70.5
16-18	6	3.0	9-10	36	18.0
Total	200	100.0	Total	200	100.0

Knowledge: 0-5: poor, 6-10: acceptable, 11-15: good, 16-18: very good; Attitude: 0-2: poor, 3-5: acceptable, 6-8: good, 9-10: very good.

Half of students (51%) have good knowledge about Nipah and comparatively 45.5% have acceptable knowledge. Only 3% have very good knowledge regarding the topic and 0.5% was poor in knowledge regarding Nipah. Majority (70.5%) had good attitude and 18% very good attitude towards Nipah. 0.5 % of medical students has poor and 11% had acceptable attitude towards Nipah.

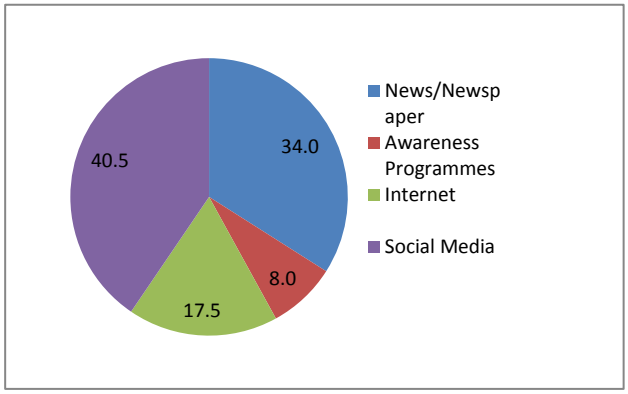

Figure 2: Source of information about Nipah.

Majority of students opted social media (40.5%) as major source of information followed by news/newspaper (34%). 17.5 % opted internet and 8% gained knowledge by awareness programmes.

DISCUSSION

Nipah virus was first recognized in 1998 during an outbreak among pig farmers in Malaysia. Since then, there have been various outbreaks, all in South Asia including Singapore, Bangladesh, and India.[6] But there are no similar studies found done regarding awareness of Nipah done on medical students. So the present study intended to know about awareness of medical students on Nipah is compared with awareness of medical students on other zoonotic disease like Rabies and Ebola.

Nipah virus is zoonotic and causes severe disease in swine and humans. Symptoms range from asymptomatic to acute respiratory syndrome with fatal encephalitis. In this study done among medical students in Northern Kerala, only half of the students were aware about occurrence of Nipah, even though the outbreak was recent. 83.5% students (167) were aware about the previous outbreak of Nipah in Malaysia and Bangladesh and 94% of students (188) are aware about the recent outbreak of Nipah in Kerala. In a study conducted in Rawalpindi about Ebola virus, 244 (79.2%) of students

had heard about the disease Ebola.In study conducted about awareness of rabies in Chhattisgarh, majority 83.1% of medical students knew about the viral cause of rabies, 93.4% knew the dog as most common reservoir of rabies and 91.8% knew the most common mode of rabies transmission by bites of rabid animal.[7-9]

72% of students (144) were aware about the reservoir host of Nipah virus (fruit bats and pig). Epidemiological investigations in Bangladesh have identified three pathways of transmission of NiV from bats to people. The most frequently implicated route is ingestion of fresh date palm sap. Infrared camera studies confirm that *P. giganteus* bats frequently visit date palm sap trees and lick the sap during collection. NiV can survive for days on sugar-rich solutions such as fruit pulp .Most date palm sap is processed at high temperature to make molasses, but some enjoyed as a fresh juice, drunk raw within a few hours of collection. In the 2005 Nipah outbreak in Tangail District, Bangladesh, the only exposure significantly associated with illness was drinking raw date palm sap and had 7.9 odds more for patients compared with controls.[10,11]

Chattisgarh study on rabies awareness revealed, about three fourth (74.3%) of medical students knew that hydrophobia as the symptom of rabies in human. Danger sites of animal bite and fatality of rabies was known by 81.4% and 68.8% of medical students, respectively. Only 45.9% of medical students knew the correct incubation period of rabies. Majority (72.7%) of students knew about the immediate wash of the wound with soap and water, but only 42.1% knew about antiseptic use. Majority (71%) of students knew the correct site and only 43.7% knew the correct schedule of vaccination. Only 29% of medical students knew about indication of rabies immunoglobulin. In the present study, more than half-68.5% of students (137) are aware about the symptoms of Nipah virus (fever, headache, nausea, vomiting, upper respiratory tract infection) and 37% of students (74) knew about the fatal complication of Nipah (encephalitis).[9]

Rawalpindi study on awareness of Ebola virus showed, 164 (53.2%) of the students correctly identified that no treatment is available for Ebola virus disease as yet. Also 163 (52.9%) said that no vaccine was available against the virus either. Also 163 (52.9%) said that no vaccine was available against the virus either. Washing hands every time after touching a patient in clinics/wards was important for 151 (49.0%) while 223 (72.4%) claimed the of use proper techniques to dispose off used injections. In the present study, 28% of students (56) are aware of infectivity rate (20-50%) and 48% of students (96) were aware of mode of spread (man-man, bat-man, pig-man). 67% of medical students commented about the treatment used (Ribavirin, targeted recombinant human monoclonal antibody therapy). 25.5% knew that Niv was tested in 3rd grade lab. The samples for Nipah Virus testing from Kerala State, India are sent to Manipal Centre for virus research and for further confirmation to National Institute of Virology, Pune. So these comparison show medical students are more aware of rabies as it is more prevalent and robust literature available than Nipah.[8,12]

CONCLUSION

We found half of the medical students had good knowledge and majority had good attitude towards Nipah. Being future doctors they need to have better knowledge and attitude towards infectious diseases like Nipah to tackle such outbreaks in the future. Special training sessions regarding Nipah should be focussed among the medical students. Health Education classes on protective measures and prevention against infectious diseases should be incorporated .Medical education should also concentrate on how to face the sudden outbreaks of Emerging and Reemerging diseases. Quiz programs, scientific innovative programs should be conducted. Research projects on infectious diseases should be promoted among medical students.

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