

RESEARCH ARTICLE

Perception about tularemia and its awareness among biotechnologists

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ABSTRACT

The main purpose of the present project is to develop awareness about tularemia, which is a bacterial disease. For this purpose, a questionnaire was prepared about the type of disease, mode of transmission, and treatment of the disease. A total of 78 subjects were participated in this awareness project. From this project, we estimated that tularemia is a bacterial disease. Moreover, treatment of this disease is available now.

Keywords: Bacteria, Streptomycin, Awareness

INTRODUCTION

Bacterial disease in humans is mainly caused by pathogenic bacteria. Basically two type of bacteria which cause disease, Gram-positive and Gram-negative bacteria.^[1-2] Bacterial cells have flagella, cell envelope, and cell membrane. Gram-positive bacteria have a large quantity of peptidoglycan while Gram-negative bacteria have less quantity of peptidoglycan. Lipopolysaccharides are present outside of the peptidoglycan layer. Due to the presence of lipopolysaccharides in Gram-negative bacteria, it is more toxic and resistant to antibiotics.^[3]

One of the bacterial disease in humans mainly caused by bacteria is tularemia, also called as rabbit fever.^[4] It is caused by bacterium *Francisella tularensis*, because it is aerobic and Gram-negative bacterium that is why it is an acute and infectious bacterial species. Males are more affected than females. It is mainly caused by deer flies, ticks, and attachment with infected animals. Breathing in dust environment and drinking contaminated water also lead to tularemia. Headache, anorexia, fever, ulcer of skin, and large lymph nodes are major signs of tularemia.^[3-8]

This disease is identified by microbial culture and blood test. It is treated by antibiotic streptomycin. This disease can be avoided by wearing long pants, use of insect repellent and avoiding dead animals.

It mainly affects mammals, rodents, insects, and birds.^[9,10]

The objective of the present project is to develop awareness of tularemia.

MATERIALS AND METHODS

A total of 78 subjects were get involved in this awareness project. Moreover, all subjects belonged to BZ University, Multan. Their age was between 18 and 22. Out of 78 subjects, 63 were females and 15 were males. From 1 to 5 questions, it was asked about the nature of the disease, either it is viral, bacterial, genetic, or metabolic. From 6 to 10 questions, it is asked about the presence of this disease in our surroundings such as our relatives, our neighbors, our friends, and also in myself. From 11 to 12 questions, it is asked about the transmission of disease either by contact or blood transfusion and it is hereditary. From 13 to 15 questions, it is asked about the therapy of disease.

Project

A questionnaire was prepared about the bacterial disease.

Statistical analysis

Statistical analysis was performed using MS Excel. In which, we were evaluate the awareness of bacterial disease between biotechnologists.

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Table 1: Questionnaire to evaluate consciousness about basics of tularemia

Question about essentials of disease	Female		Male		Total	
	Yes (%)	No (%)	Yes (%)	No (%)	Yes (%)	No (%)
1. Is tularemia a viral disease?	4.76	95.23	6.66	93.33	5.12	94.87
2. Is tularemia a bacterial disease?	95.23	4.76	100	0	96.15	3.89
3. Is tularemia a fungal disease?	6.34	93.65	6.56	93.44	6.41	93.58
4. Is tularemia a genetic disease?	19.05	89.95	6.57	93.43	16.66	83.33
5. Is tularemia a metabolic disease?	15.87	84.12	6.65	93.45	14.10	85.89

Table 2: Quiz to access perception about spreading of tularemia

Ever affected by tularemia	Female		Male		Total	
	Yes (%)	No (%)	Yes (%)	No (%)	Yes (%)	No (%)
6. You	11.11	88.88	6.68	93.32	10.25	89.76
7. Your family member	7.92	92.06	6.69	93.31	7.69	92.30
8. Your relative member	7.93	92.05	20	80	10.29	89.74
9. Your neighbor	7.91	92.09	13.33	86.66	10.25	89.24
10. Your friend	11.12	88.86	6.60	93.40	10.23	89.27

Table 3: Questionnaire to analyze about the transference of tularemia

How tularemia circulate	Female		Male		Total	
	Yes (%)	No (%)	Yes (%)	No (%)	Yes (%)	No (%)
11. Contact or by blood exchange	53.96	46.03	33.30	66.70	50	50
12. Genetically	12.69	87.30	66.71	33.29	11.53	88.46

Table 4: Opinion poll to access the remedies of tularemia

How tularemia can be cured	Female		Male		Total	
	Yes (%)	No (%)	Yes (%)	No (%)	Yes (%)	No (%)
13. Medicine	84.61	15.38	86.66	13.33	84.61	15.38
14. Surgery	17.46	82.53	13.34	86.67	16.66	83.34
15. No need of treatment	19.04	80.95	6.65	93.30	16.60	83.30

RESULTS AND DISCUSSION

Results of these discussions show that bacterial disease tularemia risk increase by flies, dead animals, and in polluted environment. However, cure is possible. The percentage of questions is present in below tables about male and female.

Questionnaire-based studies have been given important outcomes in current researches (3-10). Researches about this study are present [Tables 1-4]. About tularemia, the first case was reported in Iran in 1980. In Kurdistan Province, a survey about tularemia was carry out. Moreover, the information was carried out on the basis of risk, mode of transmission and about its characteristics that cause infection. A blood sample was collected from each participant. Sera were tested using ELISA kit (viroid/serion) to detect specific IgG antibodies against Francisella tularemia. Out of 250 serum samples, 14.40% had anti-tularemia IgG antibodies. The highest seroprevalence was

found in hunters (18%) and lowest in care workers (12%). Age had a significant positive association with seroprevalence. According to the findings of this study, it is highly recommended that physicians and care health workers are informed about bacteria circulating in this area.

CONCLUSION

It was concluded from the above survey that males are more suffered from this disease than females.

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