



**BRUCELLOSIS: AWARENESS, RISK & CONSEQUENCES RESPONSIBLE FOR
ZONOTIC BACTERIAL INFECTION AMONG URBAN & RURAL AREAS
INDIVIDUALS**

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ABSTRACT

Brucellosis is a very infectious, zoonotic, and monetarily critical bacterial illness of creatures around the world. It causes noteworthy monetary misfortunes including premature birth, misfortune in milk generation, low fruitfulness rates, and cost of substitution of creatures. The level of center of our study is to get a handle on the awareness of this disease along with its complication in the urban and rural areas of Pakistan. By this many people can easily get sound knowledge of the disease and to aware them about the treatment and prevention of it. The study was conducted amongst adult people (20 years and above) of different localities, culture and professional backgrounds. We prepared a questionnaire about the awareness & complications associated with Brucellosis in urban & rural areas of Pakistan in which 10 questions were present. This was made through an online form as well as written document and were given to different people to get the general perspectives of individuals of diverse ages with respect to the theme of study. This result shows that many of the people have no idea at all about this disease. People of rural areas are more prone to brucellosis as they have more contact with animals such as livestock, which might contain an infected animal as well. Not only this but the intake of food and milk may not be as proper as the people of urban areas due to which this category seems to be more prone than the other. After the careful study of the recent survey, it is concluded that the awareness about this disease is very less and people of urban areas are more prone to this disease because of their livestock, Conclusively; we believe that every person deserves to live a healthy life whether it be from a Rural area or Urban area and to aware people about the diseases is the duty of every medical student or teacher to save them from such mishaps, for this purpose more research work are needed to tell people about the complications of this disease.

KEY WORDS: *Brucellosis, Brucella, Brucella Endocarditis, Thrombocytopenia, Epididymoorchitis, Brucella Bacteraemia.*

INTRODUCTION

Brucellosis is a very infectious, zoonotic, and monetarily critical bacterial illness of creatures around the world. It causes noteworthy monetary misfortunes including premature birth, misfortune in milk generation, low fruitfulness rates, and cost of substitution of creatures.^[1] Brucellosis is brought about by individuals from family *Brucella*. These are little, non-motile, high-impact, facultative intracellular, Gram-negative coccus bacilli. The capacity of *Brucella* to duplicate and continue in host cells is specifically connected with its ability to bring about relentless sickness and to go around inborn and versatile safety.^[2]

The *Brucella* may enter the body through digestive tract, lungs or mucosal layers and in place skin. At that point it may spread through blood and the lymphatic framework to whatever other organ where it contaminates the tissues

and causes restricted contamination.^[3] The organism has the capacity escape phagocytic murdering through hindering the phagosome-lysosome combination and replicating inside macrophages.^[4] After a variable hatching period going from under one week to a while, non-particular systemic side effects, for example, fever, cerebral pain, disquietude, night sweats and arthralgia take after, taking after an influenza like infection. Amid the early phase of the sickness, patients are oftentimes bacteremic that has a ceaseless example, making flowing *Brucella* effectively noticeable by blood society. Once in the circulatory system, the organism is seeded to various organs/frameworks, particularly those rich in reticuloendothelial tissue, for example, liver, spleen, skeletal and hematopoietic framework.^[5] Diseases by the life forms of the variety *Brucella* has a wide clinical polymorphism, and each organ can be effected. Therefore, Brucellosis is every now and again

incorporated into differential analysis of an assortment of clinical pictures that include numerous therapeutic expert.^[6] Brucella endocarditis is an extraordinary central difficulty of brucellosis. The middle span of indications preceding analysis is 3 months. The patients underlie valvular harm, and a few endocarditis include a typical valve. Sometimes there are a transcendence of aortic association and a high rate of left ventricular disappointment. Demonstrative suspicion are fundamental so as to test blood societies effectively. Surgical treatment should be possible, all with aortic contribution and left ventricular disappointment difficult to control with solution. Patients can be given antimicrobial treatment for 3 months, without any indications of backslide of the disease or breakdown of the prosthesis amid a base subsequent time of 24 months.^[7] Mild hematologic irregularities are regular over the span of human brucellosis; nonetheless, they for the most part resolve instantly with treatment of the illness. Sometimes, thrombocytopenia is serious and can be connected with seeping into the skin (purpura) and from mucosal destinations. Conceivable components included in thrombocytopenia incorporate hypersplenism, receptive hemophagocytosis, and safe decimation of platelets. Acknowledgment of this difficulty is fundamental, since drain into the focal sensory system is connected with a high death rate.^[8] Epididymoorchitis is the most continuous genitourinary inconvenience of brucellosis. It for the most part happens in male and the most widely recognized side effects are scrotal agony and swelling. Other than this one-sided epididymoorchitis, unilateral orchitis and one-sided epididymitis have likewise been found in patients. To recognize whether the patient has aspermia or oligospermia, Sperm examination is done. The treatment arrangement for such disease can be combination antibiotic treatment began and proceeded for 6–8 weeks. Backslide happened in one and only patient. Brucellosis ought to be considered in the finding of scrotal maladies in endemic zones. A traditionalist methodology is generally sufficient for overseeing brucellar epididymoorchitis. Be that as it may, infertility issues may create in these patients. Very much composed further examinations are expected to clarify the relationship between brucellar epididymoorchitis and barrenness in man.^[9] Brucella bacteraemia is an intense febrile sickness frequently connected with rheumatologic protests. Most patients have an agglutinating counter acting agent titre $\geq 1:320$ and react well to standard chemotherapy regimens with low mortality. This disease includes some main symptoms that are febrile illness alone or fever with arthritis. Regularly utilized antimicrobial regimens comprised of streptomycin in addition to tetracycline or rifampicin in addition to doxycycline is given as a treatment program.^[10] Osteoarticular is one of the complication associated with brucellosis.^[11,12] The three most basic types of osteoarticular contribution are sacroilitis, spondylodiscitis and fringe joint pain.^[12] Loss of bone is a genuine inconvenience of restricted bacterial

contamination of the bones or the contiguous tissue. Regardless of the way that clinical and imaging parts of osteoarticular brucellosis have been depicted generally, the components included in this procedure have not been totally clarified.^[12] The skeleton is a dynamic organ framework which is always being rebuilt. These procedures include the planned exertion of osteoblasts and osteoclasts.^[13] Together, these cell capacities guarantee sound bones, giving quality and unbending nature to the skeletal framework. Osteoblasts are in charge of the testimony of the bone lattice and are thought to encourage its calcification and mineralization. Interestingly, osteoclasts drive the resorption of bone by fermentation and the arrival of lysosomal catalysts, and these cells likewise deliver bone resorption the discharge of MMP-9.^[13,14] Hematological inconveniences of brucellosis are normal and can be multifactorial because of the pathogen's tropism for focal organs (e.g. Bone marrow) and fringe organs (e.g., spleen) of the reticuloendothelial framework (RES). Changes in the hematological parameters are seen in many patients, yet pancytopenia is rare.^[15] Hemophagocytosis, hypersplenism or granulo-matous changes in the Bone marrow may be in charge of pancytopenia in brucellosis. Also, Bone marrow inclusion because of concurrent presentation of harmful ailments with brucellosis once in a while prompts pancytopenia.^[16]

The level of center of our study is to get a handle on the awareness of this disease along with its complication in the urban and rural areas of Pakistan. By this many people can easily get sound knowledge of the disease and to aware them about the treatment and prevention of it.

METHODOLOGY

The study was conducted amongst adult people (20 years and above) of different localities, culture and professional backgrounds. We prepared a questionnaire about the awareness & complications associated with Brucellosis in urban & rural areas of Pakistan in which 10 questions were present. This was made through an online form as well as written document and were given to different people to get the general perspectives of individuals of diverse ages with respect to the theme of study. Individuals reacted to the poll in composed structure. Assessment of the answers and computations were done physically & by the assistance of number crunchers with association of PC programming. The outcome was communicated in rates by utilizing structured presentations and pie graphs.

RESULT AND STATISTICAL ANALYSIS

After watchful assessments results deciphered. They were calculated in percentage that who are actually aware of this disease, amongst which areas the disease was more prone to, and what suitable treatment should be given to the affected person as shown in Fig.1,2 & 3. Moreover, individuals were asked about the prevention program, that is, to avoid oneself and others from getting

affected with such a disease. Fig.4 shows the statistical analysis.

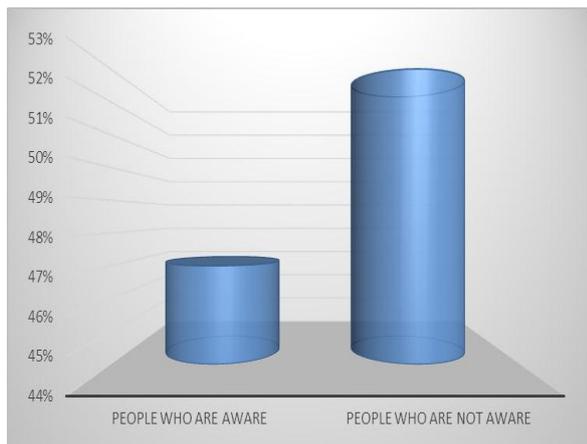


Fig.1: No. of people who are aware of Brucellosis.

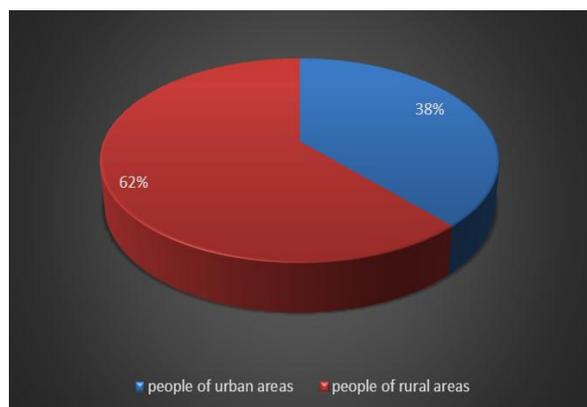


Fig.2: People who are more prone to Brucellosis

Table 1: People respond on the prevention program.

By control & /or eradication of the infection in animals who serve as a reservoir	By spreading awareness	By pasteurization of dairy milk	By animal vaccine program, animal testing & elimination of infected animals	By all of them
5%	16.3%	4.9%	6.6%	67.2%

DISCUSSION

All the survey appropriated among the people were indicated unmistakable fascination and support from the general population in the study. It was found that just 47% of the general population of both rural and urban areas have really caught wind of Brucellosis and 53% are totally unaware. This shows that many of the people have no idea at all about this disease. They were additionally asked whether they have ever seen any individual being analyzed of such illness and just 5 % individuals addressed it with a "yes" choice while the rest 95% individuals have not. Also 11% individuals fell sick by the utilization of unpasteurized milk and undercooked meat, 38% because of intake of impure water and 40% stayed unaffected by it. Individuals were likewise asked what conceivable signs and symptoms may be of this infection, 41% concurred on fever, fatigue

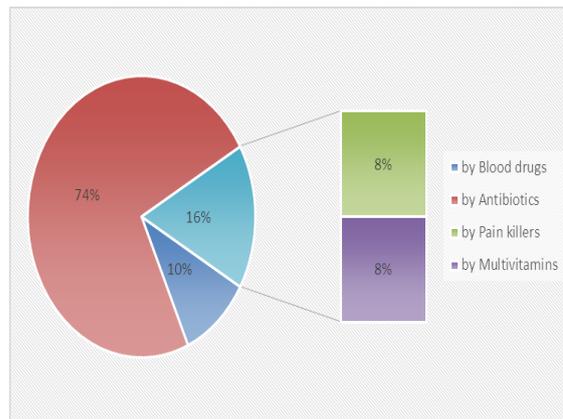


Fig.3: A/c to people, suitable treatment should be given to the affected person.

and body torment, 46% on Loss of Appetite, Abdominal pain and loss of weight, 9.9% thought it may bring about enlargement of liver or spleen while 3.4% think it may bring about anemia and other blood disorders. To know how much people know about Brucellosis, its diagnostic technique was asked , almost 70% agreed that blood tests are the best possible way to diagnose while 17% thought that physical observation might be helpful, the rest believed that biopsy (in severe cases) and radiology might be favorable. Furthermore, 80% of individuals strongly agree to immediately visit the doctor if any signs and symptoms has been noticeable while others wait for the situation to get worse or start self medication to overcome the symptoms. A question was put forward about the treatment for the patient suffering from this disease so 73% people happen to choose antibiotics as the best treatment plan while 8.3% chose Multivitamins

& pain killers, this proves that though the people who are known to this disease do not seem to know completely what it actually is and how it can be treated. Next was an inquiry concerning its complexities, 8.6% said cardiovascular issue can be brought on, 47% gastrointestinal issues, 7% bones and joints issue while 38% concurred that the majority of the specified issues can happen. We know that all diseases can be prevented for better future, hence, some points were put forward which included the awareness program, control and eradication of the infection in animals who serve as a reservoir, pasteurization of dairy products, animal vaccine program, animal testing and elimination of infected animal. But most of the people happen to agree that all the points are correct in each way possible to prevent Brucellosis. Last but not the least, a question, that is, who is more prone to this disease? Urban or Rural area people. 38.3% voted for urban areas while 61.7% for rural. It is true that the people of rural areas are more prone to it as they have more contact with animals such as livestock, which might contain an infected animal as well. Not only this but the intake of food and milk may not be as proper as the people of urban areas due to which this category seems to be more prone than the other.

CONCLUSION

After the careful study of the recent survey, it is concluded that the awareness about this disease is very less and people of urban areas are more prone to this disease because of their livestock. Conclusively; we believe that every person deserves to live a healthy life whether it be from a Rural area or Urban area and to aware people about the diseases is the duty of every medical student or teacher to save them from such mishaps, for this purpose more research work are needed to tell people about the complications of this disease.

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