Disease report

Health & Medicine

Q fever Disease Report Q fever results from infection by the bacterium Coxiella burnetti, which affects humans and, though uncommon, other animals like dogs, cats, goats, sheep, and cattle. Edward Derrick initially described the disease in abattoir workers, in Brisbane Australia, although the causative agent was a mystery. Mavis Freeman and Frank Burnet discovered the causative agent for the disease in 1937 after isolation of Coxiella burnetti from a patient of Derrick's (Mandell et al 50). The disease is zoonotic in nature and is mostly found in goats, sheep, and cows. The pathogen is a protobacterium and is closely related to Francisella. Healthcare providers will usually suspect the presence of Q fever in people who are suspected to have been exposed to the pathogen and who develop pneumonia, hepatitis, flu-like symptoms, and endocarditis (Mandell et al 51). Symptoms usually occur after approximately 20 days of exposure with most cases presenting mildly, although some severe cases do occur. Common initial symptoms of the disease include muscle pains, joint pain, headache, fever, and dry cough. Other symptoms may include rash, chest pain, abdominal pain, and jaundice or yellow skin. Long-term symptoms include shortness of breath, prolonged fever, night sweats, fatigue, and chills (Mandell et al 51). Physical exams may be done on the patient, and they could reveal an enlarged spleen and liver, as well as crackles in the patient's lungs. A heart murmur can be heard in the later stages of the disease. Tests that can be carried out include electrocardiogram echocardiogram, tissue staining to identify the pathogen in infected tissue, liver function tests, complete blood counts, blood tests aimed at discovering Coxiella burnetti antibodies, and chest x-rays that will help in the detection of pneumonia (Mandell et al 60). The disease has two phases; the first is the acute phase that lasts for approximately one to six

months while the chronic stage begins when one has had the infection for over six months (Mandell et al 62). If the disease gets to the chronic stage, it is harder to treat and requires one to take antibiotics for months or even years. However, when caught in its early stages, patients have a better outlook. The disease can be controlled or prevented by milk pasteurization that destroys the bacterium that leads to initial Q fever. If people have already developed symptoms, domestic animals that they could have encountered, need to be inspected for Q fever symptoms. Q fever was first described in 1937, in Australia and, since then, multiple reports around the world have been mentioned. The frequency of the disease ranges from 30% in rural areas to 5% in urban areas (Dvorak et al 19). However, actual incidences of the disease are underrepresented because the infection can present as flu or even be asymptomatic. There is a high incidence of the disease across Africa that ranges from 18-37%. At risk, farmers in Britain show 29% seropositivity and the country reports around a hundred cases every year. Q fever is also highly prevalent in Spain and France causing community-acquired pneumonia, as well as 5-8% of cases involving endocarditis (Dvorak et al 20). In recent years, Q fever clusters have been found in Canada’s Nova Scotia province. It is also endemic to the Middle East where transmission is under the influence of dusty and hot conditions. The Netherlands also reported increased cases between 2007 and 2010 with dairy goat farms suspected to be the source. Although the disease is not reported to be segregate according to race, it does vary according to age group and sex. Symptomatic forms of Q fever are predominant on males, which accounts for approximately 77% of all cases of Q fever that result in the US (Dvorak et al 27). In France and Australia, males are 2. 5 and 5 fold

more likely to develop Q fever than females respectively. Recreational and occupational exposure, for instance on farms, abattoirs, working as veterinarians, and hunting, could create a bias of selection. Adults also seem to be more at risk of Q fever than children with infected individuals having an average age of forty five to fifty years. Q fever is more prevalent in males aged twenty five to forty years where the reservoir for the pathogen is cattle (Dvorak et al 28). However, this incidence can be deceptive because elderly people and children are not blood donors. Patients over fifteen years old have a higher likelihood of presenting with clinical symptoms (Dvorak et al 29). Q fever that is symptomatic is seldom found in children but, where it presents, does so as in adults. The largest outbreak of Q fever in Switzerland saw the symptomatic form being 5 times more prevalent in people aged over 15 years than in those aged below 15. A Greek study was indicative of prevalence of clinical Q fever increasing with age in children. Another study showed that, with young age, there was increasing incidence of hepatitis, while, with aging, there was increasing incidence of pneumonia. If pregnant women contract Q fever, they run the risk of spontaneous abortion, low weigh at birth, and premature births. Finally, the disease has been implicated in cases involving recurrent miscarriages (Dvorak et al 29). Work Cited Dvorak, Glenda; Spickler, Rovid. & Roth, James. Handbook for Zoonotic Diseases of Companion Animals. Ames: Center for Food Security and Public Health, Iowa State Unniversity, College of Veterinary Medicine, 2011. Print. Mandell, Gerald. Bennett, John. & Raphael, Dolin. Principles and Practice of Infectious Diseases. Philadelphia : Churchill Livingstone/Elsevier, 2010. Print.