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Chagas Disease: Immigrating into the United States
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Introduction
Chagas Disease is starting to make a profound entrance into our communities within the United States. The influx of the immigrant population is the principal cause of the accumulation in the number of reported cases. (Center for Disease Control and Prevention, 2014)

The Trypanosoma cruzi is a parasite that causes Chagas disease. The triatomine blood sucking insect meets the mucosal membranes of their pray, both humans and animals. The common regions of the penetrating bite are the corners of the eye or around the mouth. It is through the feces of the vector the infected tissue is transmitted to the patient. (Kuehn, 2015)

Overview Incidence
The disease is most prominent in Mexico and Central and South America, which has seen a total of 10 to 14 million cases. However, incidence in the United States is increasing due to immigration of infected persons. (Chin, E., & Mandel, E. (2013).

The congenital form occurs in approximately 2% to 3% of infants of infected mothers (with most cases being asymptomatic or showing no specific signs) (Mandal, 2014).

Signs and Symptoms
Chagas disease has two phases: acute and chronic. The acute phase may have no symptoms or very mild symptoms. After the acute phase, the disease goes latent. If any symptoms appear they may be for many years. (New York Times, 2014).

The clinical features of megacolon include: abdominal pain, dysphagia, cough, and megasigmoid. Hypertension, pericardial effusion, and respiratory symptoms may also occur, while conjunctivitis and abdominopathy are the typical symptoms of patients with megasigmoid; however, in patients with advanced megasigmoid, obstruction, perforation, and sepsis may develop.

The most common and most serious manifestation of Chagas infection is the chagasic heart disease, the earliest sign of which includes the conduction system abnormalities (right bundle branch block and anterior hemiblock), and with the progression of the disease patients may develop atrial and ventricular arrhythmias, left ventricular dysfunction, thromboembolic events, dilated cardiomyopathy and congestive heart failure with a risk of sudden death.

Echocardiography with chronic chagasic heart patients reveals left ventricular hypertrophy, left ventricular dysfunction, dyssynchronous segments, ventricular aneurysm (apical or other), low ejection fraction, pericardial effusion, valve disease, and dilatation and dysfunction of right side (Mandal, 2014).

No symptoms or very mild symptoms, including:
• Fever
• Malaise
• Swelling of one eye
• Headache
• Gastrointestinal symptoms
• Digestive problems
• Pain in the abdomen

Pathophysiological Processes Underlying Pathophysiology
Chagas disease, or American trypanosomiasis, is caused by the parasite Trypanosoma cruzi. Infection is most commonly acquired through contact with the feces of an infected triatomine bug (also known as “kissing bug”), a blood-sucking insect that feeds on humans and animals. (Center for Disease Control and Prevention, 2014). In the United States, the most common route of a triatomine bug is allergic reaction, including asthma, allergic reactions, and cardiitis in sensitized patients. (Stevens, Dorn, Hobson, de la Rossa, Lukens, Kline, & Blot 2017)

The life-cycle of the parasite represents four cellular forms characterized by the relative position of the flagellum, kinetoplast and nucleus. The amastigote forms enter, by several cell divisions, within various tissue cells of human body, and release by rupture of the cells. The macrophages, which generally become attracted by the infective (T. cruzi) protargylophilic, are recognized as one of the first cell types encountered by the parasite during natural infection. Because of the fact of recognition of T. cruzi by macrophages, Chagas disease through natural transmission via all reptiles and lice vectors; however, during initial replication, the parasites become delayed facilitating parasite survival. (Mandal, 2014).

Complications
• Cardiomyopathy
• Enlargement of the colon (megasigmoid)
• Enlargement of the esophagus (megasigmoid) with swallowing difficulty
• Heart disease
• Hypotension

It is estimated that there are over 300,000 people living in the United States who are infected with the parasite that causes Chagas disease. More than 300 infected individuals are seen each year in the United States. (CDC, 2014)

Significance of Pathophysiology
Diseases or illnesses that are undiagnosed, untreated, and link the education of healthcare professionals have always been of interest of mine. Not to mention the bugs have roamed around the United States aren’t well schooled in diagnosis and treatment, because medical education devotes limited time to parasitic diseases in general. (Kuehn, 2015). It is this lack of education that must be addressed. Not to mention the bugs may just be necessary to add to nursing and medical schools curricula in the United States: (Mandal, 2014).

Implications for Nursing
Nursing implications for patients with Chagas Disease is, first to be aware of and knowledgeable of the possibility that individuals in the US are presenting this disease. Following a diagnosis of Chagas disease, a nurse would include the following in patient care:
• Echocardiogram
• Health history interview and physical assessment
• Nutritional assessment
• Lab work screening
• Patient education

Conclusion
Limited resources have been devoted to better understanding the impact and burden of Chagas Disease in the United States. Physicians may not be familiar with these infections because their clinical presentation, diagnosis and treatment are typically not emphasized during medical training. Even when Chagas disease is suspected, US physicians may not readily embrace the diagnosis. Some assume it is an illness that should be referred to other practitioners, whereas others may fail to provide follow-up and treatment. Physicians in the United States aren’t well-informed in diagnosis and treatment, because medical education devotes limited time to parasitic diseases in general. (Kuehn, 2015). However, for the family and physicians to understand the basic principles of diagnosis and treatment of these diseases. (Woodhall, Cantey, Wills, & Montgomery, 2014) As well as nurse practitioners and nursing staff.

Additional Resources

