



## Ms. Desrie-Ann Parris MPhil Medical Microbiology

### **Biography**

Desrie-Ann Parris is a first-year graduate student at The University of the West Indies Cave Hill Campus. She received a bachelor's degree in Biology with Biochemistry from the aforementioned University. Her field of study is Medical Microbiology where she focuses on identifying the relationship between Periodontitis and the development of Diabetes and Cardiovascular Disease in the Barbados population. Identification of this relationship may assist with early detection of the diseases later easing the burden they place on the healthcare system.

# Identification of Microbiological Pathogens and Inflammatory Markers associated with periodontitis in Diabetes and with the development of Cardiovascular Disease

MPhil Medical Microbiology: Ms. Desrie-Ann Parris

## Abstract

Type 2 Diabetes characterized by impaired insulin production and periodontal disease a microbially initiated disease are two diseases identified worldwide with an established bidirectional relationship. This indicates that the prevalence of both diseases is proportional to each other and share similar risks factors. Even though these factors provide enough linkage not every individual develops periodontal disease. In addition, there has also been research surrounding the link between periodontal disease and atherosclerosis. In this study we seek to establish the prevalence and link between periodontal disease and diabetes in Barbadian patients through, the identification and comparison of microbial patterns in diabetic and non-diabetic patients, the linkage between diabetic status and the progression of periodontal disease as well as further development of cardiovascular disease in those diabetic patients. In this study, we will compare the prevalence of periodontal disease in patients with Type 1 Diabetes (n=163), Type 2 (n=163) and a control group (n= 326). A total of 652 samples from individuals ages 13 years of age and older will be included in this study. To determine the presence of PD, an oral exam will be performed on each individual and a subgingival plaque sample taken to assess the microbial levels of bacterial strains associated with periodontal disease. In addition, a full blood count will be done to identify the presence of those inflammatory markers commonly associated with periodontitis such as TNF- $\alpha$ , Creatine Reactive Protein, Interleukin 1, Interleukin 6 and Interleukin 8.

# Identification of Microbiological Pathogens and Inflammatory Markers associated with periodontitis in Diabetes and with the development of Cardiovascular Disease

MPhil Medical Microbiology: Ms. Desrie-Ann Parris

## **Abstract (Cont'd)**

With the use of a questionnaire, we will also be able to link the presence or development of PD to other underlying factors through the analysis of their social, medical and dental history. Lastly, to determine the link between cardiovascular disease and PD an ultrasound of the carotid arteries will be performed and the results of those patients with PD and healthy controls will be compared. Overall, with high rates of obesity, diabetes and CVD this study allows us to determine if the progression of diabetes and PD in Barbados are the same as the developing world.