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Association between the bacteria *Streptococcus pyogenes* and the occurrence of rheumatic fever

Introduction and Objective: This work aimed to address the association between the bacteria *Streptococcus pyogenes* and its most serious development, rheumatic fever.

Methods: The bibliographic survey was carried out from May to June of 2019, in the databases: Medical bibliography (MEDLINE), Online Electronic Scientific Library (SciELO). It was also consulted the databases of the Ministry of Health and the Brazilian Society of Pediatrics and Brazilian Society of Cardiology. The keywords "*Streptococcus pyogenes*", "rheumatic fever" and the corresponding English term "Rheumatic fever" were used. After reading, we excluded those that were not related to the purpose of this study, resulting in the selection of 14 articles.

Discussion: Rheumatic fever resulting from *S. pyogenes* proliferation is considered a sequel and can lead to myocardial and heart valve damage. Its occurrence is of an autoimmune nature and its episodes occur at intervals of 1 to 3 weeks after having pharyngotonsillitis coming from *S. pyogenes* bacteria in genetically susceptible and relapsing hosts.

It is characterized by non-suppurative inflammatory lesions involving the cardiac muscle tissue, the joints, the subcutaneous cellular tissue and the central nervous system. Studies of the prevalence of rheumatic fever demonstrate the predisposition of patients who presented an episode of rheumatic fever to new episodes as a consequence of subsequent streptococcal infections of the respiratory tract. In the literature review of the pathogenesis of the disease, the most accepted assumption is the existence of antigens common to cardiac muscle tissues and to certain streptococcal cell structures such as M protein of the cytoplasmic membrane. In developing countries, it presents high rates of morbidity and mortality among individuals aged 5 to 15 years. In Brazil, the prevalence of rheumatic fever is 3 to 5% among children and adolescents. The low socioeconomic power, poor access to health services and malnutrition are factors that corroborate for these rates.

Results: The most affected audiences are children and adolescents. The symptoms reported in the objects of study are carditis, arthritis, chorea, subcutaneous nodules, arthralgia and fever. It is concluded that the greatest sequel from a previous infection caused by the streptococcus bacteria is rheumatic fever and, therefore, the article addresses the association of the same. The treatment was investigated. Conclusion: It was observed the ineffectiveness of the Unified Health System (SUS) to quantify the incidence and prevalence of bacterial pharyngotonsillitis caused by streptococcus. Further studies involving the *Streptococcus pyogenes* bacteria and the occurrence of rheumatic fever should be encouraged.

Keywords: *Streptococcus pyogenes*, rheumatic fever, streptococcal pharyngotonsillitis