**TITLE:** PNEUMOCOCCAL CARRIAGE AMONG ADULT PATIENTS WITH SYSTEMIC LUPUS ERYTHEMATOSUS

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## ABSTRACT:

Pneumococcal diseases, especially pneumonia, are responsible for significant morbidity and mortality among patients with immune-mediated rheumatic diseases, such as systemic lupus erythematosus (SLE). Colonization of the upper respiratory tract plays an important role in the development of pneumococcal diseases. We investigated the carriage prevalence with Streptococcus pneumoniae among adult patients with SLE. We recruited 140 patients ≥ 18 years old who attended two university hospitals in Rio de Janeiro State, Brazil, between June and December 2018. We collected two swabs (nasopharynx and oropharynx) from each patient. To detect S. pneumoniae from nasopharynx and oropharynx specimens, we performed culture on blood agar plate and on selective medium (blood agar plate with 5 mg/L gentamicin), respectively. Patients responded to a questionnaire, which included pneumococcal vaccination history, demographic and clinical characteristics. Patients' median age was 37 years (IQR: 30 and 47 years old). Most patients (n=133; 95%) were female. Excluding ten subjects with missing vaccination history, 20 (15%) patients had received at least one dose of the 23valent pneumococcal polysaccharide vaccine (PPV23). Of 140 patients, nine (6.4%) were pneumococcal carriers. We detected oropharyngeal colonization in eight (88.9%) patients; two of them also carried pneumococci in the nasopharynx. One (11.1%) patient carried pneumococcus only in the nasopharynx. All patients colonized with S. pneumoniae were female, and one (11.1%) had received the PPV23. Pneumococcal carriers were smokers (n=2; 22.2%), dwelled with children < 6 years old (n=2; 22.2%), had used antibiotic in previous 3 months (n=4; 44.4%), and presented with acute respiratory symptoms (n=6; 66.7%), such as coryza/sneezing, cough/expectoration and/or fatigue/breathlessness. Carriage prevalence was low, but strongly associated with the presence of respiratory symptoms. Oropharynx was found to be a better site to investigate pneumococcal carriage in the group of patients analyzed.

Keywords: Streptococcus pneumoniae, colonization, autoimmune rheumatic diseases

Development Agency: Sociedade de Reumatologia do Rio de Janeiro, FAPERJ