TITLE: GROUP B *STREPTOCOCCUS* COLONIZATION AMONG PREGNANT WOMEN BEFORE AND DURING THE COVID-19 PANDEMIC IN BRAZIL.

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ABSTRACT:

Group B *Streptococcus* (GBS) is a leading cause of neonatal diseases. GBS can be found in genitourinary and gastrointestinal tract of up to 40% of pregnant women, representing the main route for transmission to newborns. Changes in personal hygiene care and in antibiotic usage due to COVID-19 pandemic onset may contribute to alterations in bacterial occurrence in anovaginal microbiota. Anovaginal specimens recovered from pregnant women attended at a single maternity in Rio de Janeiro, Brazil were analyzed before (January 2019 to January 2020; 481) and during (February 2020 to March 2021; 325) pandemic. Clinical samples (806) were streaked onto chromogenic media after a pre-enrichment step and colonies were identified by MALDI-TOF MS. GBS strains had susceptibility profiles determined and whole genome sequenced. GBS was detected in 10.8% of anovaginal samples. Considering scenarios before and during pandemic, GBS colonization rate significantly decreased after pandemic onset (14.3% before vs 5.5% after; $p<0.0001$). No difference ($p>0.05$) in clinical and sociodemographic aspects of pregnant women was detected between two scenarios, indicating that changes in GBS incidence were not related to modifications in population profile. All strains were susceptible to penicillin, vancomycin and levofloxacin according to CLSI guidelines, while 79.7%, 11% and 3.1% were non-susceptible to tetracycline, erythromycin and clindamycin respectively, but no difference ($p>0.05$) between two scenarios was detected. Serotype Ia was the most prevalent (47.7%), followed by serotypes V (20%), II (15.4%), III (9.2%) and Ib (7.7%). Serotypes Ia, III and V were more common pre-pandemic, while serotype Ib was more frequent and serotype II was less frequent during pandemic. CC23

was related to serotypes Ia and V, comprising mainly ST23 and ST24 respectively, while CC19 was mostly related to serotype II and CC17 to serotype III. Only CC23 was detected during pandemic. The main resistance gene found was *tet*M (76.9%), followed by *mre*A (9.6%), *mel* (3.8%), *erm*B (1.9%), APH(3')-IIIa (1.9%) and *aad*(6) (1.9%). Current clinical practices and hygiene habits related to COVID-19 pandemic onset may have impacted anovaginal microbiota, leading to GBS colonization rate reduction and slightly different distributions of serotypes and CCs among GBS colonizing pregnant women in Rio de Janeiro. Our data supports the need of a robust and sustained surveillance of GBS among pregnant women in Brazil.

Keywords: *Streptococcus agalactiae*; GBS; pregnant woman; COVID-19 pandemic.

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