ORT_14 - Prevalence of SARS-Cov2 variants of concern (VOC), in Brazil, in the pandemic peak (2021- 2022)

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Introduction: The SARS-Cov2 virus, emerged in China, in December 2019 and quickly spread all over the world. What led to the accumulation of mutations. Since then, the WHO genomic surveillance network has been monitoring the virus evolution. The variants of concern (VOC) are variants associated with modification in clinical disease presentation, a rise in transmissibility, decrease in the public health efficiency or available diagnostic, vaccines and therapeutics.

Objectives: The aim of this study is to evaluate the prevalence of SARS-Cov2 VOC around Brazil, by a RT-PCR methodology.

Methodology: In November of 2021, Bio-Manguinhos began to distribute the SARS-Cov2 VOC 4Plex kit, a GMP, registered at ANIVSA, RT-PCR assay, with high correlation with sequencing evaluation of VOC, for the LACEN of 19 states. Which were enrolled in this multicentric study, to run an epidemiological surveillance of SARS-Cov2 in the whole country. The data was collected between August 2021 and February 2022.

Results: The study received data of 8597 swab samples, from SARS-Cov2 positive subjects. Of these, 53.78% were female, against 46.22% male ones. The median age in the study is 39,5 years. The collection of our data, started with the domination of Beta/Gama and Delta VOC, in August of 2021. Around December 2021, Omicron VOC gets in very intensely in Brazil and started to lead the number of cases. Overtime, Omicron widespread in Brazil, with a few numbers of Delta cases. That shows that Omicron variant rules the epidemic in Brazil, since December of 2021 to February of 2022, what corroborates with its high rate of transmissibility and neutralizing antibodies escape. The Omicron was the most abundant variant found in this study (76,6%), followed by Delta (19,9%) and Beta/Gama (3,4%). It is remarkable recognized that we have more cases of Omicron in four months, than Delta in seven months of the study.

Conclusion: This kit assay allows Brazil to proceed a faster screening and suggesting a pre-typing of SARS-Cov2 VOC. Proposing the VOC results, directing these to sequencing analysis. Thus, an improved epidemiological surveillance response was feasible all over the country and a reinforce in sanitary measures were advised to the population. Additionally, this molecular strategy can work as a monitoring tool and epidemiological search to forecast new infections waves.

Keywords: SARS-CoV-2, VOC, RT-PCR