

Phylogeographic analysis of the first year of the SARS-CoV-2 pandemic in Uruguay

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The impact of the Coronavirus Disease 2019 (COVID-19) pandemic on the socioeconomic system of countries worldwide has been influenced by public policy responses and the continuous emergence of new SARS-CoV-2 variants. This study analyzes the public policy responses implemented in Uruguay to delay and reduce the dissemination of SARS-CoV-2 variants that spread at the two different phases during the first year of the country's epidemic. Phase I, spanned from March to September 2020 and was a stage of epidemic control mainly through non-pharmaceutical interventions and a widespread Test, Trace, and Isolation strategy (TETRIS). Our phylogeographic analysis of Uruguayan and closely related non-Uruguayan SARS-CoV-2 sequences identified 11 different viral variants between March and April 2020, which correspond to at least 19 independent introduction events of the virus in Uruguay mainly from non-neighboring countries. Only two SARS-CoV-2 variants introduced during this period were disseminated locally at a large scale. Between May to September 2020, our phylogeographic analysis indicates a continuous cross-border viral disseminations from Brazil, with at least 13 independent introductions of Brazilian SARS-CoV-2 variants to Uruguay. Phase II, spanned from October 2020 to February 2021. During this stage, new restrictions were applied in response to the exponential growth of cases in the country and the loss of the TETRIS system. The total recovered number of independent viral introduction events between October to December 2020, was lower or similar than the estimated in previous periods of epidemic control; but half of these introductions were able to establish persistent transmission networks of medium/large size. Thus, the period that immediately preceded the first exponential epidemic wave in Uruguay was not characterized by a remarkable increase in the number of viral imports into the country; but was marked by the long-term period of cryptic transmission and the successful establishment of some long-term transmission chains.

Palabras clave

COVID-19, Uruguay, variants, phylogeographic

Características de la colaboración

Este trabajo se generó a partir de autores y coautores que ya colaboraban antes de la pandemia

Interinstitucionalidad

Si

Interdisciplina

No

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