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Global Influenza Hospital Surveillance Network

SARS-COV-2 STILL ON THE STAGE: THE NEED TO PURSUE AN INTEGRATED RESPIRATORY VIRUS SURVEILLANCE

M. D. TANRIÖVER*[1], A.T. BAĞCI BOSI[1], L. ÖZIŞIK[2], F. ŞIRVAN[1], T. MÜDERRISOĞLU[1], O.A. UYAROĞLU[1], E. ÇIFTÇI[2], H. ÖZDEMİR[2], B. H. İNCELİ[2], N. PENEZOĞLU[2], R. GÜNER[3], B. KAYAASLAN[3], K. SEMIZ[3], K. SARCAK[3], A. ÖZKAYA PARLAKAY[3], B. GÜLHAN[3], Ş. ERDINÇ[4], M. ÖZSOY[4], A. G. ER[1], S. ÜNAL[1]

[1] Hacettepe University, [2] Ankara University, [3] Ankara Bilkent City Hospital, [4] Ankara Research and Training Hospital
Ankara, Türkiye

Aim/Background

To demonstrate the importance of an integrated viral surveillance to tackle the changing epidemiology and the continuing disease burden of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). International institutions such as European Centre for Disease Prevention and Control provide guidance for integrated surveillance of respiratory viruses. However, SARS-CoV-2 is not an integral part of sentinel influenza like illness and severe acute respiratory infections surveillance in Türkiye.
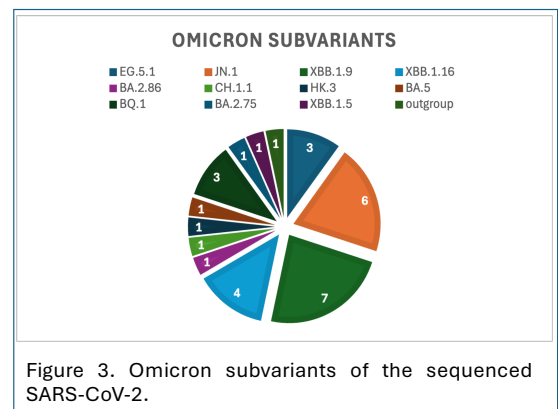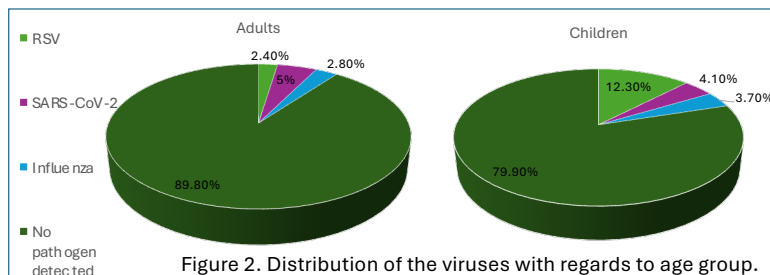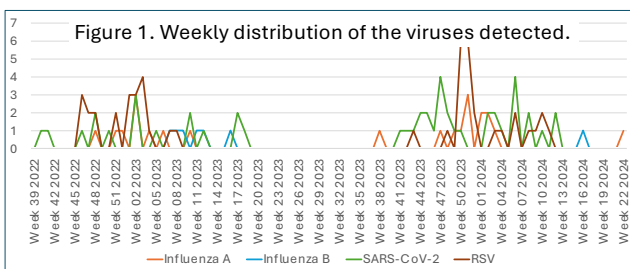
Methods

We utilized the database from the Global Influenza Hospital Surveillance Network project in Türkiye between November 1st, 2022 and May 31st, 2024 over two seasons. Patients admitted to five hospitals with influenza like illness symptoms in the last 7 days and stayed overnight in the hospital were screened three days a week and swabbed within 72 hours of admission in a standardized year around surveillance methodology. An oligonucleotide panel analysis was utilized during Nov 1st 2022 - Oct 31st 2023 and multiplex PCR was utilized thereafter to test for influenza A and B, SARS-CoV-2 and respiratory syncytial virus (RSV). Genomic sequencing was obtained by oligonucleotide panel analysis (Illumina platform).

Results

A total of 984 inpatients were enrolled and 969 of them, 724 (75%) of whom were adults, had valid laboratory results. The seasonality of the viruses detected is shown in Fig. 1. RSV was the most prevalent pathogen detected in 4.9% of the samples, followed by SARS-CoV-2 (4.8%) and influenza A and B (3%) (Table) (Fig. 2). Genomic sequencing of 31 SARS-CoV-2 samples were available: 30 belonging to WHO Clade Omicron and one recombinant probable Omicron (Fig. 3).

Table. Results of the laboratory analyses (Percentages indicate row % of positive samples)

Hospital ID	Patient population	Number of patients swabbed	Number of (+) samples	Influenza (+) samples, n (%)	SARS-CoV-2 (+) samples, n (%)	RSV (+) samples, n (%)
01	≥18 years old	539	36	6 (16.7%)	20 (55.5%)	10 (27.8%)
04	< 18 years old	162	29	5 (17.3%)	4 (13.8%)	20 (68.9%)
09	≥ 18 years old	98	26	10 (38.5%)	11 (42.3%)	5 (19.2%)
08	< 18 years old	83	20	4 (20.0%)	6 (30.0%)	10 (50.0%)
05	≥18 years old	87	11	4 (36.4%)	5 (45.5%)	2 (18.1%)
Total		969	122	29 (23.7%)	46 (37.7%)	47 (38.6%)

Figure 1. Weekly distribution of the viruses detected.

Figure 2. Distribution of the viruses with regards to age group.

Figure 3. Omicron subvariants of the sequenced SARS-CoV-2.

Discussion and conclusions: SARS-CoV-2 is circulating and resulting in hospital admissions among all age groups adding onto the influenza and RSV peaks. Integrated respiratory virus surveillance is crucial to guide informed public health policies and effective vaccination programs.

Correspondence: Mine Durusu Tanriover (mdurusu@yahoo.com)