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The vaccination against COVID-19 efficacy and safety among people living with HIV: data from observational study in Poland

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Background

People living with HIV are a heterogeneous group of immuno-compromised persons.

Detectable HIV viral load and chronic comorbidities are independently increasing the risk of severe outcomes from COVID-19 among people with HIV.

We aimed to assess the efficacy and safety of vaccinations against COVID-19 in this group of persons.

Methods

We performed a retrospective analysis of data collected from medical records of HIV-positive individuals between 1st January 2021 and 30th April 2022 that were under HIV Out-patient Clinic in Warsaw care. All patients received vaccination within Polish COVID-19 vaccination national program.

Analyses included data on type and date of administration of subsequent doses of COVID-19 vaccination, adverse vaccine reactions, and the history of SARS-CoV-2 infection (confirmed either RT-PCR or antigen test).

In 21 patients S-RBD antibodies were determined 14 days after the second dose of the vaccine (Magnumi platform) .

Results

In total 218 patients were included in the analyses with a median age of 43 years [IQR: 35.5–51.5 years], median CD4+ count 591 cells/uL [IQR: 459.5–745.0 cells/uL] and 99.1% on effective cART.

Results

Most of these patients were male (191/218, 87.6%) and were vaccinated with Comirnaty vaccine (143/218, 65.5%). Eighteen (8.3%) were COVID-19 convalescents.

In 21/218 (9.6%) patients the data on S-RBD antibody titers were available. A significant increase in the titers (> 100 AU/mL) was observed while comparing titers measured one week after the 1st dose to titers performed after the 2nd vaccine dose (regardless of vaccination type) (3/21, 14.3% vs. 17/21, 81.0%; p<0.0001).

In total 27 (12.4%) patients had a breakthrough SARS-CoV-2 infection (Table). None of the patients diagnosed with COVID-19 required hospitalization.

Vaccine adverse events (VAE) were reported by 33 (15.1%) of patients, all were mild and self-resolving with time.

Conclusions

Vaccination against COVID-19 is safe and effective against severe course of the disease among people living with HIV.

However, after vaccination 12.4% of patients acquired SARS-CoV-2 infection.

Longer observation is required to measure the sustainability of post-vaccination protection against severe COVID-19 among people living with HIV.

Table. Characteristics of the HIV-positive individuals vaccinated against COVID-19 stratified by the type of vaccination

N (%)	All	Comirnaty	SpikeVax	Any mRNA	Vaxzevria	Jansen
All	218 (100.0)	143 (65.5)	16 (7.3)	159 (72.9)	36 (16.5)	22 (10.1)
Women	27 (12.4)	21 (14.7)	2 (12.5)	23 (14.5)	2 (5.5)	2 (9.1)
HIV VL < 50 copies/mL	216 (99.1)	142 (99.3)	16 (100.0)	158 (99.4)	35 (97.2)	22 (100.0)
CD4+ < 200 cells/uL	6 (2.7)	5 (3.5)	0 (0.0)	5 (3.1)	0 (0.0)	0 (0.0)
CD4+ < 350 cells/uL	24 (11.0)	16 (11.2)	1 (6.2)	17 (10.7)	5 (13.9)	1 (4.5)
CD4+ < 500 cells/uL	75 (34.4)	51 (35.7)	6 (37.5)	57 (35.8)	11 (30.5)	6 (27.3)
Adverse reaction after 1st vaccine dose	33 (15.1)	14 (9.8)	2 (12.5)	16 (10.1)	13 (36.1)	4 (18.2)
COVID-19 before vaccination	18 (8.3)	12 (8.4)	2 (12.5)	14 (8.8)	0 (0.0)	2 (9.1)
After the 1st dose	4 (1.8)	0 (0.0)	0 (0.0)	0 (0.0)	1 (2.8)	3 (13.6)
After the 2nd dose	11 (5.0)	9 (6.3)	0 (0.0)	9 (5.7)	2 (5.6)	0 (0.0)
After the 3rd dose	12 (5.5)	12 (8.4)	0 (0.0)	12 (7.5)	0 (0.0)	0 (0.0)
COVID-19 post vaccination	27 (12.4)	21 (14.7)	0 (0.0)	21 (13.2)	4 (8.3)	3 (13.6)

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