

COVID-19 vaccine and titers of specific antibodies

COVID-19 vaccines induce immunity through different mechanisms. The aim of this study is to compare the titers of specific antibodies in subjects vaccinated.

In this Table we Comparison between patients receiving **Pfizer-BioNTech** COVID-19 vaccine and those who received **Sinopharm** COVID-19 vaccine and **Astrazeneca** COVID-19 vaccine in terms of demographics, past medical illnesses, and previous history of COVID-19 infection.

Characteristics	Pfizer (n=95)	Sinopharm (n =96)	Astrazeneca (n = 91)	Total (n=300)	p- Value
Age 20–40 Y 40–60 Y >60 Y	20 44 47	24 41 34	22 38 30	66 123 111	0.673
Gender Male Female	61 52	56 46	49 36	166 134	0.54
BMI 18.5–24.9 kg/m ² 25–29.9 kg/m ² 30–40 kg/m ² >40 kg/m ²	30 85 2	28 70 0	25 60 0	83 215 2	0.36
Smoking habit No Yes Ex-smoker	92 40 4	70 25 0	53 15 1	215 80 5	0.4
DM	35	45	20	100	0.2
HTN	40	60	20	120	0.726
Pulmonary diseases	15	10	5	30	0.394
Cardiovascular diseases	10	12	4	26	0.039
Hyperlipidemia	8	5	2	15	0.283
Other comorbidities	2	1	1	4	0.461
Previous history of COVID-19 positive test	3	1	1	5	0.723
IgG titers result Positive Negative	125 2	70 16	80 7	275 25	<0.001

Abstract

Background: vaccines induce immunity through different mechanisms. At present, three families of vaccines were implemented to counter the spread of COVID-19: mRNA vaccines such as Pfizer-BioNTech, and classic inactivated vaccines such as Sinopharm and the Oxford vaccine AstraZeneca uses double-stranded DNA.

Aims: The aim of this study is to compare the titers of specific antibodies in subjects vaccinated with either the Pfizer-BioNTech COVID-19 vaccine , AstraZeneca vaccine or the Sinopharm vaccine.

Methods: The study included 300 samples , The sampled population included Jordanian adults who has been vaccinated with two doses of either Sinopharm, AstraZeneca or Pfizer-BioNTech COVID-19 vaccines. The two doses were 21 days apart for all included patients, and the enrollment in the study was carried out 6 weeks after the administration of the second dose.

Results: Overall, 300 participants were included in this study. A comparison between the three groups in demographics, past medical illnesses, and previous history of COVID-19 is illustrated in Table 1. As demonstrated, (99.3%) of those who received the Pfizer-BioNTech vaccine had positive IgG titers, while (85.7%) of those who received the Sinopharm had positive IgG lab results and (86.2%)for those who received AstraZeneca vaccine.

Conclusions: In fully vaccinated subjects, the Pfizer-BioNTech vaccine has shown superior quantitative efficiency to Sinopharm and AstraZeneca vaccines. A booster dose is supported for subjects who have had the Sinopharm and AstraZeneca vaccines, or those with chronic immunosuppressive diseases